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ABSTRACT

This manual introduces undergraduate students to empirical aspects of the political development process. It contains 12 exercises, some of which are based on outside readings or excerpts included in appendices. Exercises one through three examine theoretical, conceptual, and definitional issues. Exercise four focuses on social and economic correlates of political development. Exercises five and six relate communism and democracy to the development process. Longitudinal data from the Minnesota Political Data Archive are introduced in exercises seven and eight to illustrate effects of viewing political development from the standpoint of historical patterns and sequences of social mobilization. Concluding exercises examine specific political leadership patterns as they relate to political development. The manual includes a code and computer printout. Students do not need previous training in statistics or methodology, and no special equipment is needed to complete the exercises. (Author/AV)

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# MANUAL
# for the
# POLITICAL DEVELOPMENT LABORATORY

by

Roger Benjamin

with the assistance of
Fay G. Cohen
and Eugene R. Kersey

Political Laboratory Curriculum Project
Department of Political Science
University of Minnesota

SO 012 066

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Fall 1969

# Preface

The purpose of this manual is to introduce intermediate level students to the field of political development centering on the empirical work now emerging. To accomplish this purpose, we examine a series of topics designed to expose the student to selected problems in the field of political development.

The first three exercises examine theoretical, conceptual, and definitional issues. Exercise 4 focuses on social and economic correlates of political development. Assignments 5 and 6 relate communism and democracy to the development process. Longitudinal data from the Minnesota Political Data Archive is introduced in exercises 7 and 8 in an attempt to illustrate the pitfalls and usefulness of looking at political development from the standpoint of historical patterns and sequences of social mobilization. The last 4 assignments examine specific political leadership patterns as they relate to political development. The manual includes a code and computer printout for the analysis deck used in the exercises. Also included in appendix B are excerpts reprinted from William Flanigan and Edwin Fogelman, "Patterns of Political Development and Democratization: A Quantitative Analysis," a paper presented at the American Political Science Association Meeting, September, 1967.

The emphasis of the manual is on empirical aspects of the political development process, however the insturctor will have considerable flexibility to elaborate on methodological considerations. We have not assumed any previous training in statistics or methodology though any such knowledge on the student's part increases his analysis options. Also, no equipment of any kind is required to complete the exercises since we have included a printout of the analysis data in the appendix. If available, counter-sorters, calculators, and computers with standard non-parametric statistical routines will be helpful.

The exercises provided in no way exhaust the potential uses of the data provided thus we would expect students, after completing the manual exercises, to formulate their own exercises or secondary data analysis projects. Of course, these exercises can be supplemented with additional material on political development.

In formulating the data analysis deck, we were aided by Fay Cohen, research associate of the Societal Research Archives System project, Department of Anthropology, University of Minnesota. We, of course, are

totally responsible for the use of the data in these exercises. Grateful acknowledgement of several colleagues in the Department of Political Science in preparing the exercises is made. We especially thank the editors of the series William Flanigan and Samuel Krislov. John Kautsky made valuable criticisms at an early juncture in the development of this project.

## Editor's Preface

This manual is the fourth of a series aimed at bringing to undergraduate teaching the sophistication and the excitement of dealing with genuine research problems, the discovery and examination of data, rather than passive acceptance of conclusions. Members of the Department of Political Science at the University of Minnesota have been involved in the development of such a program for nearly six years. The first of the series -- on political behavior, written by William Flanigan and David RePass -- was issued in 1967. A revised edition of that effort is available from Little, Brown and Company. The second -- on comparative politics by Edwin Fogelman -- will be available from them in Spring 1970. We expect over the course of the next year to issue similar, but individualized, efforts as follows: community power, Thomas Scott; legislative behavior, Eugene Eidenberg; international relations, Ellen Pirro; and quantitative methods by Roger Benjamin and William Flanigan. As these are revised for final publication, they will also be published by Little, Brown and Company.

The project itself is supported by the Office of Education and the National Science Foundation. In accordance with the principles of public support, and our own purposes, we are making all materials available without restriction, asking only that credit be given for any use of the materials.

Samuel Krislov
Minneapolis
November 1969

## Assignment I

## Empirical Theory and Political Development

Assigned Reading:

A. Kaplan, The Conduct of Inquiry (San Francisco: Chandler Publishing Co., 1964), Chapters IV, VIII.

Suggested Reading:

Thomas Kuhn, The Structure of Scientific Revolutions (Chicago: University of Chicago Press, 1962).

### I

### Empirical Theory

In every subject matter there develops to some degree a shared agreement over the kinds of questions considered important to ask, the types of explanations considered admissible, and the approaches used to study the basic datum of the subject matter. For us the subject matter in question is political development and since this manual approaches political development from assumptions and methods not shared by every student in the field, it may be useful to outline the basic components of what we identify as the empirical theory approach to political development.

Political development as a field of special importance has emerged in the wake of World War II and the creation of over 60 newly independent nations. Fast paced methodological changes have left a good deal of confusion and indecision over what the field consists of and what methods of analysis are most appropriate. Thus far compelling practical needs have dictated the field's central concern with basic descriptive data of national political units. However, recently political development has come within the scope of the behavioral movement in political science. Generally, this movement may be said to contain two basic features of interest to students of political development: (a) a renewed emphasis on political aspects of human behavior as the central problem of concern; and (b) the adoption of the value system of science as a guide to the study of political behavior. Before beginning to grapple with the specific definitional, conceptual, and analytical problems in the political development field, it may be useful to survey the meaning and use of the notions of empirical theory, concept formation, and measurement, three problems which, as we shall see, have application in political development.

We have indicated our acceptance of empirical theory. Let us specify the basic components of this term, first distinguishing empirical theory as a special type of theory. First, a minimum definition of theory might be the systematic formulation of underlying principles of observed phenomena. However, recourse to the "real" world through hypothesis verification in such a way as to allow intersubjective evaluation is the major feature that distinguishes empirical theory and this is what is meant by adherence to the value system of science. This may be the only useful method of distinguishing empirical theory since other features such as systematic and empirical observation, description, explanation, and prediction are not unique to empirical theory. Any one or a combination of these features characterizes any theory. A crucial aspect to the minimum definition above is the view that if theory is to be defined more tightly, the question theory for what, in terms of what body of knowledge must be added. This addition is especially important because of the many disparate definitions of theory offered. For example, theory has been variously defined as a set of empirical generalizations, an ideal type, a classification scheme, or a formal deductive axiomatic explanation scheme. The point is that if theory is discussed in terms of the physical sciences, formal theory comes to mind; conversely, theory as a set of empirical generalizations identifies much of what is generated in small group research or demography. For political development the minimum conditions for acceptance as empirical theory are frequently ignored and probably nowhere met to any substantial degree. Yet, the thrust of this manual on political development is toward empirical theory construction even if the complexity of the phenomena inhibits fulfillment of that thrust.

## II

## Concept Formation

Concept formation in political science and particularly in political development shoulders the difficult burden of specifying the range of our operational inquiry. Concepts themselves, in the broadest sense, are merely sets of rules which organize some aspect of reality. Concepts are, of course, not unique to science; indeed, they provide the sensory filters for every individual which inform him which and how much of the outside stimuli to admit. However, the especially difficult task of science is to derive nomologically, or inductively ,concepts which progressively allow more of each particular science's data to be subsumed under new concepts which are more elegant, powerful, relevant, etc. For the most part concepts allow propositions to indicate simple inclusion or exclusion in the classification itself. In turn, the concept may fit into other latent or manifest concept sets or theories. We usually distinguish concepts from theories by stating that the relationship to observations is definitional for concepts (for theoretical constructs as well) while the same relationship is a question of empirical fact for theories. However, even this distinction may not be accepted absolutely since every observation extends beyond the purely empirical.

The problem of how good political development concepts are actually formed is related to what Hempel has termed the paradox of conceptualization. Briefly, this is that in order to develop an admissible theory about a portion or all of political development useful concepts are needed, but we require good theory to develop the useful concepts. Thus, concept formation like theory building never ends. Political development offers examples, e.g., democracy, nation, national integration, etc., of the continual movement back and forth between concepts and theories developed out of the concepts and then revised concepts developed out of the theory. Difficulties in developing shared conceptual agreement are explored below in Assignment VI on Democracy and Political Development.

## III

## Measurement

Many of the problems we shall deal with in this manual may be subsumed under a set of delimitations usually placed under the rubric measurement in philosophy of science discussions. This is so, for in the broadest sense all empirical political analysis represents continuing efforts to devise finer measurement distinctions to categorize the phenomena under investigation. Thus there is a constant effort not only to capture phenomena through broad classifications which demarcate the inclusion and exclusion of phenomena, e.g., "he is a student" which distinguishes him from the non-student set, but to develop much more precise partial or total orderings of the classes, e.g., 1st through the 12th grade student. The first example, student, is a nominal measure, a type of measure which is surprisingly useful and certainly very common in political analysis. The second example, the sub-categories of grades for the student, is an interval measure, a type of measure not often used in political analysis, but held up as a kind we ought to move toward in political development. Nominal concepts such as democracy-autocracy, stable-unstable are commonly used while occasionally related to interval level concepts from social and economic development such as per capita income, births and deaths per 1,000 population, etc.

There are major measurement difficulties in political development which relate particularly to the choice of statistical measures. Nominal classifications such as communist-non-communist are broad, very inclusive and the investigator can be reasonably sure his aspect of political reality under investigation is encompassed by his measure. He may not, however, utilize very powerful measurement systems, for instance, interval based statistical techniques or formal mathematical characterizations. In short, the possibility of developing an explanation of much power from concepts capable of nominal measurement is small. The reverse difficulty characterizes the effort of the investigator who develops ordinal or even interval measurement categories for the data, for instance the level of political participation measured by electoral data. More powerful statistical techniques can be used on his categories, his explanation is more likely to discriminate items within his classification more finely, but has he lost important qualities of his data? Are the cutoff points for the subcategories made arbitrarily or are they based on logical or natural criteria? Perhaps there are no final answers to these questions since the success of one's measurement operations lies in the quality of the final explanation product. However, any student who engages in empirical work in the field of political development necessarily must be aware of these difficulties and problems.

For our purposes we shall further delimit the characteristics of the nominal, ordinal, and interval measurement distinctions mentioned above since you will be using them in the exercises. To review briefly the characteristics of each level of measurement it is necessary to recall that each level provides us with increased amounts of information about the units measured. Nominal measurement simply records whether or not units of observation fall into a category: each unit either has the identifying characteristic or it does not. Obviously this is not a high degree of discrimination but it is adequate for many analytic purposes. Nominal measures may include many categories but no order among them is established; it is only possible to say for each of the many categories whether or not a unit belongs in the category. For example, being a high school graduate or not being one would represent nominal (and dichotomous) categories.

Ordinal measurement locates each unit of observation in a category along a dimension such that we may order the categories on some basis. The ordering of the categories means that each unit is either the same as or more than or less than every other unit. This ordinal relationship may be quantified in this way: with respect to every unit (or category) it is possible to compare another unit (or category) and to assign a score of "1" for more than, "0" for the same as, and "-1" for less than the first unit. This simple quantitative comparison is not confined to three categories but may be extended to many more merely as long as it is possible to maintain the ordered relationship. To continue with examples from education it is common to find ordinal measurement in social analysis like grade school, high school and college educated.

Interval measurement locates units of observation with respect to one another ordered so precisely that the intervals between observations may be added, subtracted, multiplied and divided. For most statistical computations this is the maximum amount of information we are able to use. For at least some purposes years of schooling would represent an interval measure.

It is easy to see that we can convert an interval measure into an ordinal measure or either type into a nominal measure. For example, if we had recorded the age of each individual in a study, the measurement of actual age would be an interval measure. Given the actual ages it would be simple to create a few categories like "under 25," "25 to 45," "over 65," etc., or to reduce the entire range of observations to nominal categories like "under 50," and "50 and over." For examples of nominal, ordinal, and interval measurement you may turn to appendix A.

## Assignment II

## Political Development; Some Definitional Aspects

Assigned Reading:

Reinhard Bendix, Nation-Building and Citizenship (New York: John Wiley, 1964), pp. 1-29.

John H. Kautsky (ed.), Political Change in Underdeveloped Countries (New York: John Wiley & Sons, 1962), pp. 3-29.

Everett E. Hagen, "How Economic Growth Begins: A Theory of Social Change," in J. Finkle and R. W. Gable (eds.), Political Development and Social Change (New York: John Wiley, 1966) pp. 129-139.

Suggested Reading:

David Apter, The Politics of Modernization (Chicago: University of Chicago Press, 1965), pp. 1-42.

Gideon Sjoberg, "Folk and Feudal Societies" in J. Finkle & R. W. Gable (eds.), Political Development and Social Change (New York: John Wiley, 1966), pp. 45-63.

In every important subject matter there is recurring discussion over basic theoretical assumptions, key concepts, and methods and techniques to be used to study the phenomena. The field of political development is no exception. Here, we shall confine ourselves to considering some basic definitional considerations.

There are two aspects to the argument we are going to review in this exercise. Historical attention to problems of developing countries gained momentum after the second World War. Then and now political development was felt largely to be identified with the non-industrial world--the countries outside of the North American-European axis and the island nations of Australia, New Zealand, and Japan. This has meant that social scientists concerned with development, from their various field perspectives, have gradually separated out a set of problems to be worked on in the context of the countries listed above by inference. Many feel, therefore, that developed societies should be carefully distinguished from developing societies. Whether the distinction has much importance conceptually is questionable, yet it is clear the distinction has affected greatly the kinds of studies thought to be acceptable. For example, until very recently development scholars did not study patterns of economic, social, and political evolution in the developed world. It would appear that important generalizations may be generated from analysis of the political development patterns of 18th and 19th century England and Germany. All this has meant that social scientists specializing in the development process have formed some agreement about their subject matter. They are generally concerned with problems associated with the non-industrialized world, more specifically the rapid changes occurring there.

If there is tacit recognition concerning a set of problems under the rubric development, little conceptual agreement on the basic components of political development follows. A basic issue is whether political development is considered as an independent or dependent dimension. Scholars who focus on cultural, social, or economic problems often view political development as a function of one or a combination of these other problem areas. Alternatively, political development students typically view social, economic, or cultural features as interacting with or being determined by political dimensions. Therefore, the student of political development is confronted by diverse and often conflicting views of the theoretical basis of political development. Consider for instance the term developing countries. Depending on the scholar, the term developing country is rejected for "underdeveloped,""less-developed," "modernizing," "industrializing," "non-industrial," etc. Others reject these terms as culture-bound or teleological and wish to speak simply of political change. We shall treat these various terms as attempts to characterize the changes occurring in societies which enter the initial phases of industrialization.

There are two aspects we are going to review here—the distinction between "developed" and "developing" societies and the primacy of the political development concept, i.e., whether the phenomena of political development are to be viewed as independent or dependent dimensions.

First, as discussed above, it is necessary to recognize that scholars have defined the concepts of development and modernization in different ways. In each case, a definition will refer to social phenomena--or sets of phenomena--that may or may not be included in another definition. In order to become familiar with the variety of concepts and definitions found in the literature it will be helpful to identify some specific authors' definitions and then observe how they differ from or resemble one another.

What are the principal concepts used by the authors you have read in classifying political systems ("modern," "traditional," "developing," etc.) and how does each author define the concepts he uses?

What elements are common to these definitions and how do the definitions differ? Do the authors use the same term to describe different phenomena, or do they use different terms to describe the same phenomena?

The characteristics that are mentioned in describing different types of systems fall into at least two categories: social characteristics and attitudinal characteristics. Social characteristics refer to institutions or patterns of activity; attitudinal characteristics refer to cognitive and effective dispositions (i.e., how people think and feel about the system).

Are the authors' concepts defined in terms of the same units of analysis (e.g., roles, institutions, attitudes, etc.)? If not, what implications does this have in terms of our ability to define a "developing political system"? a "developed political system"? an "undeveloped political system"? (Note: you may wish to answer the next question before you attempt to answer this one.)

On the chart below, list those characteristics which are associated with each type of political system.

| | Pre-modern or Traditional | Developing or Transitional | Modern or Developed |
|---|---|---|---|
| Characteristics | | | |

For each of the characteristics listed in the chart, indicate with a symbol (a) which are attitudinal.

Another distinction that may be evident in the chart is between characteristics that are directly political and those that refer to demographic, economic, or other non-political features of the system.

For each of the characteristics listed in the chart, indicate with a symbol (p) which are directly political.

Students of political development attempt not only to describe different types of systems but also to explain how and why modernization occurs. Up to this point you have identified several different concepts of development as well as the underlying dimensions or sets of variables included in each concept. In order to describe the process of development it is necessary to relate these variables with each other in a way that clearly explains the nature of their interdependence.

Select two "theories" of political development or modernization from your readings and state, in the form of several hypotheses, the relationship between these variables. Be sure that you can identify and distinguish between the dependent and the independent variables.

Assuming that you were asked to validate each of these hypotheses, which variables seem to you to be the most ambiguous and most difficult to operationalize?

Given the same hypotheses, what problems might you encounter in attempting to specify precisely the direction and extent of association between these variables?______________________________________________

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## Assignment III

## Images of Political Development

Assigned Reading:

A.F.K. Organski, The Stages of Political Development (New York: Knopf, 1965), Introduction.

Samuel Huntington, "Political Development and Political Decay," World Politics, Vol. XVII, No. 3 (April 1965), pp. 386-430.

Underlying the problem of definitional considerations is the issue of central theoretical assumptions held about political development. Theoretical assumptions may be conceived of as the images, more or less explicitly formulated, which guide and structure inquiry at its most basic level. These images determine not only those aspects of reality which are conceptualized, but also delineate the parameters of admissible explanations and methodological tools. Therefore, we are interested in consequences the minimum consensual images have for political development.

All writers on political development speak of growth. This may be in the form of increased governmental capacity, complexity of the organizational structures of central political institutions, increased autonomy of the governmental institutions, or other variants. For students of political development as in the case of scholars of economic and social development, the proposition that growth or development is a positive "good" is central. Associated in the minds of most political development students is the view that the scope of political change occurring after the onset of industrialization is much greater than in other historical periods. Thus political development is often seen as a function of modernization and the politics of non- or pre-industrial societies, past or present, are not seen as being relevant since the political linkage with industrialization is absent. Although fewer writers today emphasize the temporal evolution of political institutions from a point selected by the investigator toward an increasingly complex and stable set of political institutions, even the most sensitive observers react positively to the idea that the apparent evolution which occurred in the presently modernized societies is or will take place eventually in the transitional societies. The stress is on concepts such as political mobilization, development, social and political integration, nation-building, etc. Benchmarks such as democracy, political stability, governmental bureaucratization are used to evaluate the level of political development achieved in any society. Finally, the highest percentage of political development specialists do not see the process operating independently; rather it is characterized as a function of social or economic dimensions or the interaction of these dimensions in particular historical sequences.

The question we raise regarding the sketch is whether in fact it is relevant. Is it productive of useful descriptions and explanations of political development phenomena? At least in part we would suggest the answer is no. Optimistic projections about the achievement of political development, either in the present or the future, have been made with declining regularity for the societies variously called underdeveloped, transitional, developing, etc., since the end of World War II. However, in Asia, Africa, and Latin America it clearly is becoming more accurate to speak of the politics of instability. Everywhere the breakdown of existing political institutions is evident and the pattern of political instability through the disintegration of central government institutions via military takeover, revolts by labor-intellectual alliances, and other means, is becoming routinized. It is more accurate to speak of a circle of political instability in present transitional societies than to continue to view these societies as moving through stages or the continuum of a political development process. Yet even the most sensitive observers refer to this growing pattern as pathologies or breakdowns.

If the above is a more accurate image of the political development process, what accounts for the present more optimistic image of political development? First the countries from whose perspective most political scientists write have attained a modicum of success in generating long term economic and social growth and apparently political development as well. Bound up with this is a set of symbols and assumptions which characterize the milieu within which western political scientists work. Though most of these symbols are on what has been called the tacit dimension, one assumption has been brilliantly explicated by J. B. Bury, the idea of progress. This concept with its special implications for all science has gained unquestioned acceptance by most, if not all, social and specifically political scientists. To add to the probability of the continued acceptance of the bias toward development and integrative versus disintegrative measures, intellectuals from transitional societies themselves share these biases. They are educated either in the modernized societies or in an indigenous educational system which mirrors the style and content of the modernized world's educational structures. Therefore, one finds little difference concerning basic assumptions toward the development process between writers in the developed and transitional worlds.

Where, then, do we go from here? How should assumptions or basic images about political development be recast? You will be asked to form your opinions on these matters, but first consider the following points.

Political development, in its broadest terms, should be viewed as a branch of political history, nothing less nothing more. It involves the study of the politics of transitional societies, societies undergoing the process of industrialization. Positive or negative denotations associated with the usual set of assumptions, such as democracy, the evolutionary direction of political or for that matter all development should be avoided. Rather we should confine our initial assumptions to a concern for making descriptive and explanatory statements about the politics of transitional societies.

Beyond this we must be prepared to at least give equal time to the view which suggests that non-developmental concepts such as political instability, or the circular nature of political change in terms of the capacity, scope or autonomy of central political institutions versus the developmental conceptualization of such political change are central. Such a view would mean we would be prepared to examine problem areas within, say, the confines of the dimensions of the community formation level, political participation, and political institutionalization that have heretofore gone unexamined. In other words, why not focus on the requisite of political instability? For example, the statements on Nigeria before the recent coups and final break by Biafra emphasized, even lauded, the supposed orderly progress toward national integration and the development of a strong autonomous central political structure. In retrospect all this seems like so much nonsense. If it were possible, it would be exceedingly useful to study the process of disintegration which has been underway there.

What assumptions or images do you infer are present in Organski?

What problems are there in this view?

What assumptions or images do you infer are present in Huntington?

What problems are there in this view?

Based on your analysis of the reading and written work for assignment two and this assignment, present your own "image" or set of theoretical assumptions about political development.

Let us now use these assumptions. What are transitional societies which are, in terms of your image, currently undergoing political development? Justify your choices.

Are there transitional societies currently undergoing "decay," disintegration, etc.? Again, be sure to justify your choices.

## Assignment IV

## Social and Economic Correlates of Political Development

Assigned Reading:

Kenneth Janda, Data Processing: Applications to Political Research (Evanston: Northwestern University Press, 1965), Introduction, Chapter 3, passim.

Arthur Banks and Robert Textor, A Cross-Polity Survey (Cambridge: M.I.T. Press, 1963), Introduction.

From the first three exercises we have seen evidence of widespread disagreement over key definitions and assumptions. It also became clear that there is disagreement over the relative importance of the social and economic factors thought to be associated with political development. However, many students of political development do feel that social and economic aspects are the most important variables and that political development may be considered broadly as a function of the level of social and economic development in a society. Therefore, it may be worthwhile to examine some of the relationships thought to hold between social, economic and political development. To fulfill this task socio-economic data is provided. The reader should be warned that clear one to one relationships are conspicuous by their absence in this type of social research. However, the goal of this assignment is to realistically involve the reader in socio-economic aggregate data analysis.

First, we should review attempts to state these relationships. Classical political theorists such as Aristotle and Plato presented competing paradigms of the Polity, yet both conceived of the political structure as the highest organized level of complexity coterminous with the nation-state. The family, the economy, the society itself were conceived of as being subsumed under the Polity. Penultimate questions for classical philosophers were related to the nature of the existing polity and the organization or character of the "best" polity, i.e., the type of political structure which would come closest to allowing man to achieve the good life. Interestingly, by the 19th century some political philosophy had reached the polar conclusion, vividly illustrated in the writings of Karl Marx, that the economic structure of society is the most important independent dimension and determines or conditions the political structure. More recently economists and sociologists have generated developmental theories which attempt to establish sophisticated variants of the Marxian, Spencerian, etc., view by attempting to specify empirical indicators of economic and social change. We shall see now what kinds of relationships do exist between the social, economic and political dimensions.

To look at these relationships we shall utilize data from Arthur Banks and Robert Textor, A Cross-Polity Survey. These data take the form of coded information punched on standard computer cards. The code is simply a guide for understanding the numerical notations punched into the computer card. The code accompanies this exercise. The social, political, and economic information is recorded for each country and each card is identified by an alphanumeric country name. Therefore, you will be able to recognize each card by a simple visual inspection. Other than the computer cards a counter-sorter will be useful for completion of this laboratory exercise. An explanation of the use of the counter-sorter is provided by the reading in the Janda assignment. In addition, a print-out of the cards is provided in the appendix thus making it possible to complete the exercise without using the equipment.

Prefatory to our exercise we may review some essential features associated with aggregate data in the study of political development (the social-economic variables coded below are examples of aggregate data) and computer storage and data analysis. First, the advantages. For the first time basic social-economic statistics, albeit in an incomplete form, have been collected, coded, and stored by the Yale Political data program (see Bruce Russett, et al., World Handbook of Political and Social Indicators) and more recently by the Minnesota Historical Political Data Archive pioneered by William Flanigan and Edwin Fogelman. The availability of these data allows us to subject theories and hypotheses about various aspects of political development to empirical validation. The revolutionary potential this provides students of political development may hardly be overemphasized. In addition, data which are collected, coded, and stored according to an explicitly defined set of conceptual and operational procedures often may be analyzed with the aid of statistical measures of association and tests of significance. Parallel in importance is the opportunity of secondary analysis or replication of the original analysis. The building of cumulative knowledge can develop only when concepts, operational indicators of these concepts, and hypotheses are presented in such a way as to allow intersubjective evaluation. Only in this way can scholarly critical communication develop. There are liabilities as well. Data stored on computer cards are only as good as the sum series of steps of initial concept formation, construction of operational measures of these concepts, and final coding decisions have made them. This means the investigator who develops the data and codes it to be punched on the computer cards must be especially cautious. Incorrect coding decisions return to haunt the analyst. In this connection it is useful to review some of the coding decisions made by Banks and Textor. Look closely at their distinctions between highly bureaucratized countries and those deemed low on this scale. You may or may not agree with their distinction but you should note that the coded categories are the results of decisions made by Banks and Textor regarding any simple entry.

We shall work with the social-economic and political variables provided in the code. For our purposes political development will be equated with Banks' and Textor's delimitation of that term. "See Variable 83: Political Development; 1940-1960 in the Code Sheet."

First, draw a random sample of thirty countries from your printout. Then, separate your countries in terms of the political development measure and list them in the appropriate categories below:

Political Development Measure

| High | Medium-High | Medium | Medium-Low | Low |
|---|---|---|---|---|

Next, take your random sample of thirty countries and rank them according to one of the social and economic measures provided in the Code Sheet. Specify below which measures you have selected:

| Social Development Measure | | | Economic Development Measure | | |
|---|---|---|---|---|---|
| High | Medium | Low | High | Medium | Low |

What differences do you notice between the relative position of countries in terms of your social-economic development measures?

What differences are there between the relative positions of the countries on the social-economic variables and the political development measures? What is your interpretation of the degree of difference or congruity?

How do the following countries rank on your social-economic measures: India, Argentina, Dominican Republic, Greece, Italy, Great Britain?

| | | | |
|---|---|---|---|
| Social Measure | High | Economic Measure | High |
| | Medium | | Medium |
| | Low | | Low |

Are any of the country rankings different in terms of the social and economic measures? ____________________

Rank the same countries on your political development measure.

Political Development

High

Medium

Low

Compare the rankings from questions 5 and 6. What is your interpretation of the similarities and differences? ____________________

From viewing the results of your social-economic and political development measures what conclusions have you reached regarding their level of correspondence? Are there any other strategies you would like to employ to develop a higher or lower level of measurement correspondence?

## Assignment V

## Communism and Economic Development

Assigned Reading:

S. M. Lipset, Political Man (New York: Doubleday and Co., 1960), pp. 45-58.

Robert Marsh and William Parish, "Modernization and Communism: A Re-Test of Lipset's Hypotheses," American Sociological Review, Vol. XXX, No. 6 (December, 1965), pp. 934-942.

Roger W. Benjamin and John H. Kautsky, "Communism and Economic Development," American Political Science Review, Vol. LXII, No. 1 (March, 1968), pp. 110-123.

Morris Watnick, "The Appeal of Communism to the Underdeveloped Peoples," in John Kautsky (ed.), Political Change in Underdeveloped Countries (New York: John Wiley and Sons, 1962), pp. 316-334.

Many scholars have viewed Communism as a unique kind of political ideology which creates a distinct type of political regime wherever it becomes dominant. Following from this Communism, Communist parties and governments are viewed as monolithic entities. Depending on whom the student reads, this means that Communism is regarded as an alien ideology, formed in the Soviet Union, exported by international Communist movements, etc. Simply put, Communists are often regarded as people who transcend national boundaries, people that are largely Communists before they are Englishman, Japanese, or American. One approach to the study of Communism that has been gaining in importance has to do with looking at the relationship between Communism and the level of economic, social, and political development. Of course, Marx, himself, was quite explicit about positing the direction of the relationship between economic development and Communism. Marx saw Communism growing in strength as economic development continued. For example, he saw the opportunities for Communism as being much greater, in mid and late 19th century when he wrote, in industrialized countries such as England, Germany, or the United States rather than in the countries in the transitional society group.

Our concern is one of establishing some method of relating the strength of communist parties to levels of economic development. In order to do this we must first examine the significance of communist parties as modernizing movements in transitional societies. One response to political and economic change takes the form of the modernizing movement, often manifest in such organizations as the communist party, militant labor unions, political party organizations, etc. These movements emerge out of a critical response to certain aspects of modernization. The social composition of these movements is an important defining characteristic since particular elements of the population are, at different stages of economic development, more or less inclined to join these movements depending on their evaluation of the personal costs and benefits resulting from membership.

Before analyzing the social composition of one type of modernizing movement—the communist party—we should first establish some basic measures of modernization. Here, we shall deal exclusively with measures of one aspect of modernization--economic development. We shall use two indicators of economic development in this exercise: 1) agricultural population as per cent of population and 2) per capita gross national product. First, we shall see how our sample of countries is distributed along different levels of development. Then, we shall analyze these groupings of countries in terms of the relative significance and composition of the communist party as viewed by political analysts.

Classify your sample* of countries in terms of agricultural population as per cent of total population (See Appendix B):

Table I

Agricultural population (% of population)

| Country | High | Medium | Low | Very Low |
|---|---|---|---|---|
| | | | | |

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*For this exercise our sample will consist of the non-Communist countries coded in Arthur Banks and Robert Textor, A Cross-Polity Survey. Communist Countries are excluded because the function of Communist parties differs qualitatively in Communist and non-Communist countries. As in the other data analysis exercises we have appended the actual printout which lists the coded information necessary to do this exercise.

Classify your sample of countries in terms of per capita gross national product:

### Table II

Per capita gross national product

| Country | Very Low | Low | Medium | High | Very High |
|---|---|---|---|---|---|
| | | | | | |

Examine both of your tables and state the relationship between the two indicators. That is, could you predict the location of a country on one scale knowing its position on the other?

We shall now attempt to establish a typology of societal types based on both the two economic development measures (above) and on another measure which differentiates societies according to the degree of industrialization and Western impact found in these societies. While this is our own classification scheme, other authors suggest that societies can be meaningfully distinguished along roughly the same dimensions. These societies are grouped within the following categories:

| | |
|---|---|
| Type I | Traditional, No modernizing movement |
| Type II | Traditional with modernizing movement |
| Type III | Advanced Modernizing Movement |
| Type IV | Non-Colonial, some industry |
| Type V | Advanced industrial |

See your code for the distribution of countries in each societal type.

How closely do these societal-types correspond with their respective counterparts listed in Table II, i.e., per capita gross national product?__________

__________________________________________________________

__________________________________________________________

The authors suggest that within each of these societal types, modernizing movements—and in particular the communist party—tend to attract and recruit different groups of individuals. In other words, they argue that communist party membership and composition is a function of societal conditions such as industrialization, economic conditions, social and ethnic composition, literacy and education, social norms, personal adjustment. etc. These authors attempt, with varying success, to explain the relationships between what is often referred to as "susceptibility to communism" and particular social and economic characteristics such as those we have mentioned. Each author has selected a particular group of countries which corresponds to one or several of our societal types. We shall begin by identifying these types according to author.

In the chart below, list which authors describe each societal type and the countries or regions included in his essay:

Table III

| | Author | Country or Region |
|---|---|---|
| Type I | | |

### Table III (con't.)

| | **Author** | **Country or Region** |
|---|---|---|
| **Type II** | | |
| **Type III** | | |
| **Type IV** | | |
| **Type V** | | |

Now that you have seen some empirical examples of each of these societal-types, i.e., particular regions and countries, it is possible to proceed to examine the functions and compositions of communist parties in each of these types of societies. It is important to realize that our selection of countries is somewhat arbitrary and is not considered a representative or "typical" sampling. They have been selected because the communist parties may be grouped in the same framework, i.e., class and occupational groupings, as a response to industrialization and political change, etc. These studies only suggest what we might find in the large number of countries not examined here.

On the next page, you are asked to identify the kinds of groups which your authors explain comprise the major elements of communist parties in each societal type.

## Table IV

## Communist Party Membership in Five Societal Types

| Societal Type | Major Classes Represented | Major Occupations Represented | Ethnic Backgrounds | Education Levels | Membership's View of Party Function - Esoteric, Exoteric, etc. | Size of* Party (Rank) |
|---|---|---|---|---|---|---|
| I | | | | | | |
| II | | | | | | |
| III | | | | | | |
| IV | | | | | | |
| V | | | | | | |

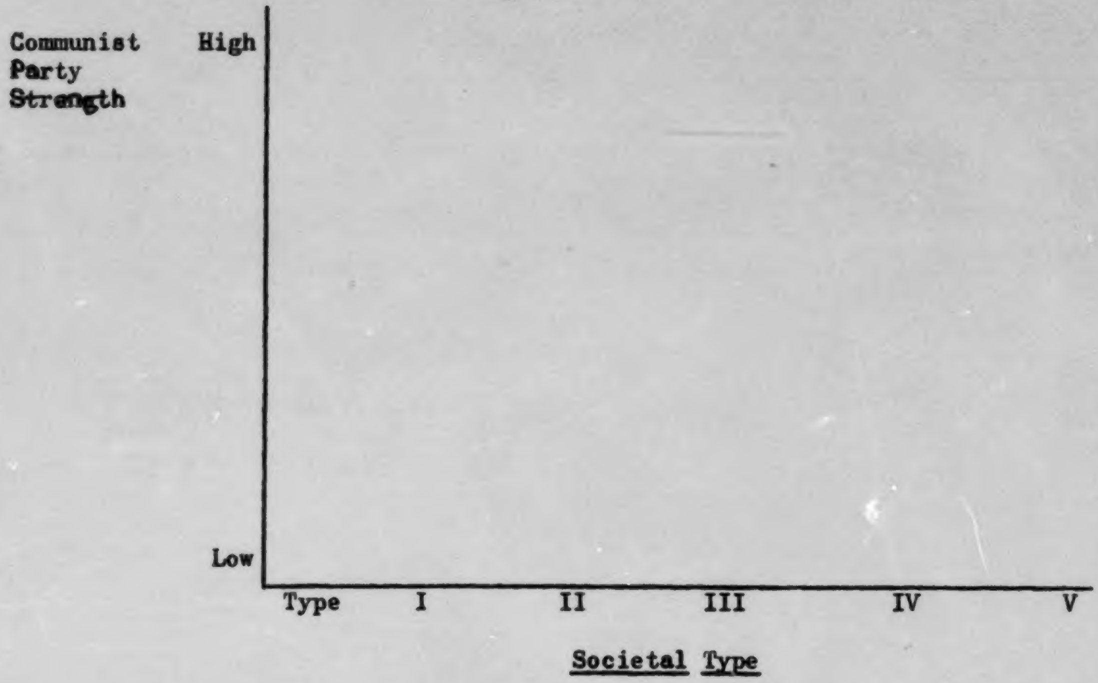
---

*Based on ranking between societal types (1,2,3,4,5)

Summarize the information on your completed chart with special reference to the differences between the kinds of groups aggregated by the communist party in each societal-type.

Draw the direction of the relationship between communist party strength and societal-type in terms of Lipset's, Marsh & Parish's, Benjamin & Kautsky's idea of the direction.*

Figure I



*Distinguish the three curves.

Do the curves suggest a revision in Lipset, Marsh, or Benjamin? How? Why?

What are the implications of the hypotheses generated in the studies above for the analysis of Communism? Is communism monolithic? How should communist movements be compared?, etc.

## Appendix A

## Alphabetical List of Countries and Their Communist Party Membership

| Country | C.P. Membership* | C.P. membership as per cent of working age population |
|---|---|---|
| Afghanistan | no known members | .000 |
| Australia | 5,000 | .078 |
| Austria | 35,000 | .760 |
| Belgium | 11,000 | .186 |
| Bolivia | 6,500 | N.A. |
| Brazil | 31,000 | N.A. |
| Burma | 5,000 | N.A. |
| Burundi | Nil | .000 |
| Cambodia | 100 | .004 |
| Cameroun | Nil | .000 |
| Canada | 3,500 | .033 |
| Central Afr. Rep. | Nil | .000 |
| Ceylon | 1,900 | .040 |
| Chad | Nil | .000 |
| Chile | 27,500 | .650 |
| Colombia | 13,000 | N.A. |
| Congo (Brazzaville) | Nil | .000 |
| Congo (Leopoldville) | Very Small | N.A. |
| Costa Rica | 300 | .051 |
| Cyprus | 10,000 | 3.243 |
| Dahomey | Nil | .000 |
| Denmark | 5,000 | .170 |
| Ecuador | 2,500 | N.A. |
| El Salvador | 200 | .023 |
| Ethiopia | Nil | .000 |
| Finland | 40,000 | 1.441 |
| France | 260,000 | .905 |
| Gabon | Nil | .000 |
| Germany, Fed. Rep. | 50,000 | .138 |
| Ghana | Nil | .000 |
| Greece | 20,000 | .366 |
| Guatemala | 1,300 | N.A. |
| Guinea | Nil | .000 |
| Honduras | 2,400 | .261 |
| Iceland | 1,000 | .999 |
| India | 135,000 | .055 |
| Indonesia | 2,000,000 | 3.800 |
| Iran | 1,500 | .015 |
| Iraq | 15,000 | .474 |
| Ireland | 100 | .006 |
| Israel | 2,000 | .156 |
| Italy | 1,350,000 | 4.190 |
| Ivory Coast | Nil | .000 |
| Jamaica | Nil | .000 |
| Japan | 120,000 | .200 |
| Jordan | 500 | N.A. |

*Source, United States Department of State, Bureau of Intelligence and Research, World Strength of the Communist Party Organizations (January, 1965).

| Country | C.P. Membership | C.P. membership as per cent of working age population |
|---|---|---|
| Laos | 100 | N.A. |
| Lebanon | 3,000 | N.A. |
| Liberia | Nil | .000 |
| Libya | Nil | .000 |
| Luxemburg | 500 | .221 |
| Malaysia | 2,000 | .060 |
| Mali | Nil | .000 |
| Mauritania | Nil | .000 |
| Mexico | 50,000 | .275 |
| Morocco | 1,250 | .017 |
| Nepal | 3,500 | N.A. |
| Netherlands | 12,000 | .169 |
| New Zealand | 500 | .039 |
| Nicaragua | 250 | .031 |
| Niger | Nil | .000 |
| Nigeria | Less than 100 | N.A. |
| Norway | 4,500 | .199 |
| Pakistan | 3,000 | .007 |
| Panama | 400 | .070 |
| Paraguay | 5,000 | .600 |
| Peru | 8,500 | .180 |
| Philippines | 1,800 | .013 |
| Portugal | 2,000 | .035 |
| Rwanda | Nil | .000 |
| Saudi Arabia | Negligible | N.A. |
| Senegal | Nil | .000 |
| Sierra Leone | Nil | .000 |
| Somalia | Nil | .000 |
| Spain | 5,000 | .025 |
| Sudan | 2,500 | .382 |
| Sweden | 20,000 | .402 |
| Switzerland | less than 6,000 | .167 |
| Syria | 4,000 | .190 |
| Tanganyika | Nil | .000 |
| Togo | Nil | .000 |
| Trinidad | Very Small | N.A. |
| Turkey | 1,000 | .007 |
| Uganda | Nil | .000 |
| United Arab Rep. | 1,000 | N.A. |
| United Kingdom | 34,372 (claimed) | .114 |
| United States | 12,000 (claimed) | .007 |
| Upper Volta | Nil | .000 |
| Uruguay | 10,000 | .600 |
| Venezuela | 30,000 | .760 |
| Yemen | Negligible | N.A. |

## Appendix B

## Code

The following measures and categories were used in our research.

(1) Membership of Communist parties:

1. 5,000 and below
2. 5,001 - 10,000
3. 10,001 - 20,000
4. 20,001 - 35,000
5. 35,001 - 50,000
6. 50,001 - 75,000
7. 75,001 - 100,000
8. 100,001 - 1,000,000
9. 1,000,001 and above
10. N.A.

(2) Membership of Communist party as per cent of working age population:

0. .25 and below
1. .26 - .50
2. .51 - 1.0
3. 1.1 - 5
4. N.A.

(3) Level of urganization:

1. High (20% or more of population in cities of 20,000 or more and 12.5% or more of population in cities of 100,000 or more).
2. Low (less than 20% of population in cities of 20,000 or more and less than 12.5% of population in cities of 100,000 or more).
3. Ambiguous
4. Unascertained

(4) Agricultural population as per cent of total population:

1. High (over 66%)
2. Medium (34-66%)
3. Low (16-33%)
4. Very low (under 16%)
5. Unascertained

(5) Gross national product:

1. Very high ($125 billion and above)
2. High ($25-124.9 billion)
3. Medium ($5-24.9 billion)
4. Low ($1-4.9 billion)
5. Very Low (under $1 billion)

(6) Per capita gross national product:

1. Very High ($1200 and above)
2. High ($600-1199)
3. Medium ($300-599)
4. Low ($150-299)
5. Very Low (under $150)

(7) Status of economic development:

1. Developed (self-sustaining economic growth; GNP per capita over $600)
2. Intermediate (sustained and near self-sustaining economic growth)
3. Underdeveloped (reasonable prospect of attaining sustained economic growth by the mid-1970's)
4. Very underdeveloped (little or no prospect of attaining sustained economic growth within the foreseeable future)
8. Ambiguous

(8) International Financial Status:

1. Very high (UN assessment of 10% or above)
2. High (UN assessment of 1.50-9.99%)
3. Medium (UN assessment of 0.25-1.49%)
4. Low (UN assessment of 0.05-0.24%)
5. Very Low (minimum UN assessment of 0.04%)
9. Unascertained

## Appendix C

## Countries by Societal Types

### Type I

Afghanistan
Burundi
Cambodia
Central Afr. Rep.
Chad
Dahomey
Ethiopia
Gabon
Ivory Coast
Laos
Liberia
Libya
Mali
Mauritania
Nicaragua
Niger
Saudi Arabia
Sierra Leone
Togo
Upper Volta

### Type II

Cameroun
Congo (Brazzaville)
Congo (Leopoldville)
El Salvador
Honduras
Iran
Jordan
Malaysia
Nepal
Nigeria
Panama
Paraguay
Rwanda
Senegal
Somalia
Syria
Tanganyika
Uganda
Yemen

### Type III

Bolivia
Brazil
Burma
Ceylon
Chile
Colombia
Costa Rica
Cyprus
Ecuador
Ghana
Guatemala
Guinea
India
Indonesia
Iraq
Ireland
Israel
Jamaica
Lebanon
Mexico
Morocco
Pakistan
Peru
Philippines
Portugal
Sudan
Trinidad
Turkey
United Arab Republic
Uruguay
Venezuela

### Type IV

Finland
France
Greece
Italy
Spain

### Type V

Australia
Austria
Belgium
Canada
Denmark
German Federal Republic
Iceland
Japan
Luxemburg
Netherlands
New Zealand
Norway
Sweden
Switzerland
United Kingdom
United States

## Assignment VI

## Democracy and Political Development*

Assigned Reading:
- S. M. Lipset, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," in Nelson Polsby, Dentler and Smith, *Politics and Social Life* (Boston: Houghton Mifflin Co., 1963), pp. 541-568.
- Philips Cutright, "National Political Development: Social and Economic Correlates," *Ibid.*, pp. 569-582.
- D. E. Neubauer, "Some Conditions of Democracy," *American Political Science Review*, Vol. 61, No. 4 (December 1967), pp. 1002-9.

We learned from the previous exercise that Communism is related to social and economic factors in very interesting ways. It may be that democracy is also related to social and economic development.

Since the beginning of political philosophy, scholars have been interested in the questions relating to the social, economic, psychological, and historical conditions under which democratic systems flourish; but only in recent years has the question become a focus for systematic quantitative analysis. In this exercise we shall examine some recent studies concerned with this question.

A first requirement in examining the conditions for effective democracy is to agree on a definition of democracy. Since we are interested in quantitative analysis we need a definition that is not only conceptually satisfying but that refers to measurable phenomena. That is, we need an *operational* definition of democracy. A good operational definition of democracy will identify the basic characteristics that we consider distinctive about democratic systems and will also tell us how these characteristics can be measured. It should be stressed that no matter how conceptually satisfying a particular definition may seem, unless it refers to measurable phenomena--unless it is operational--the definition is inadequate for purposes of quantitative analysis.

No one definition of democracy is universally accepted. On the contrary, many definitions are available, and the particular definition we adopt will

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*This assignment is adopted from "Definitions and Indicators of Democracy," Assignment I in Edwin Fogelman, *Manual for the Comparative Politics Laboratory* (Minneapolis, Minnesota: Political Laboratory Curriculum Project, Department of Political Science, University of Minnesota, 1968).

have important effects on our findings. In this exercise we will consider alternative definitions of democracy that have been used in three recent studies, and we will notice some implications of adopting one definition or another.

Three studies that classify countries according to measures of democracy are Lipset's "Some Social Requisites of Democracy," Cutright's "National Political Development," and Neubauer's "Some Conditions of Democracy." However, the measures of democracy are different in each study. These differences will be summarized in Figure 6.1.

How does Lipset define democracy?______________________________

____________________________________________________________

____________________________________________________________

In Column 1 of Figure 6.1 list the measures that Lipset uses as criteria of democracy.

Figure 6.1. Measures of Democracy in Three Recent Studies

| Lipset | Cutright | Neubauer |
|---|---|---|
|  |  |  |

Are Lipset's criteria in classifying countries good operational measures? Are the grounds of assigning countries into one category or another clear and explicit? Could you replicate Lipset's classification on the basis of the measures and data he provides?

Lipset's criteria are intended as measures of democracy. Cutright's Political Development Index, on the other hand, is intended as a measure not of democracy but of development. Yet the items included in the Index refer to similar political characteristics.

What does Cutright's Political Development Index actually measure?

In Column 2 of Figure 6.1 list the items included in Cutright's Index.

Cutright not only lists a number of items but combines them into an Index on the basis of which countries can be scored and ranked. Notice that Lipset's criteria are used only for classifying countries in dichotomous categories--that is, stable democracies or unstable democracies, and unstable dictatorships or stable dictatorships--while Cutright's Index is used to order countries in terms of their score on a continuous scale. Such an ordering permits additional kinds of analysis that would not be possible with the more simple dichotomous classification.

Do you agree with the weights Cutright assigns in constructing his Index? If not, why not?

Is the Political Development Index a good measure of political development, as Cutright defines it? Is it a good measure of democracy?

Neubauer critizes Cutright's Index of Political Development as a measure of both development and democracy. In Column 3 of Figure 6.1 list the indicators that Neubauer includes in his Index of Democratic Performance.

How do Neubauer's indicators differ from the items in Cutright's Index?__________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

The importance of the differences in measures summarized in Figure 6.1 becomes apparent when we go on to classify and order countries according to one or another of the suggested sets of measures. The basic question is, to what extent will countries be classified and ordered in the same way if we use different measures of democracy? If the classification and ordering of countries turns out the same in all instances it makes little difference which measures we adopt; but if the classification or ordering of countries differs substantially then the choice of particular measures becomes significant.

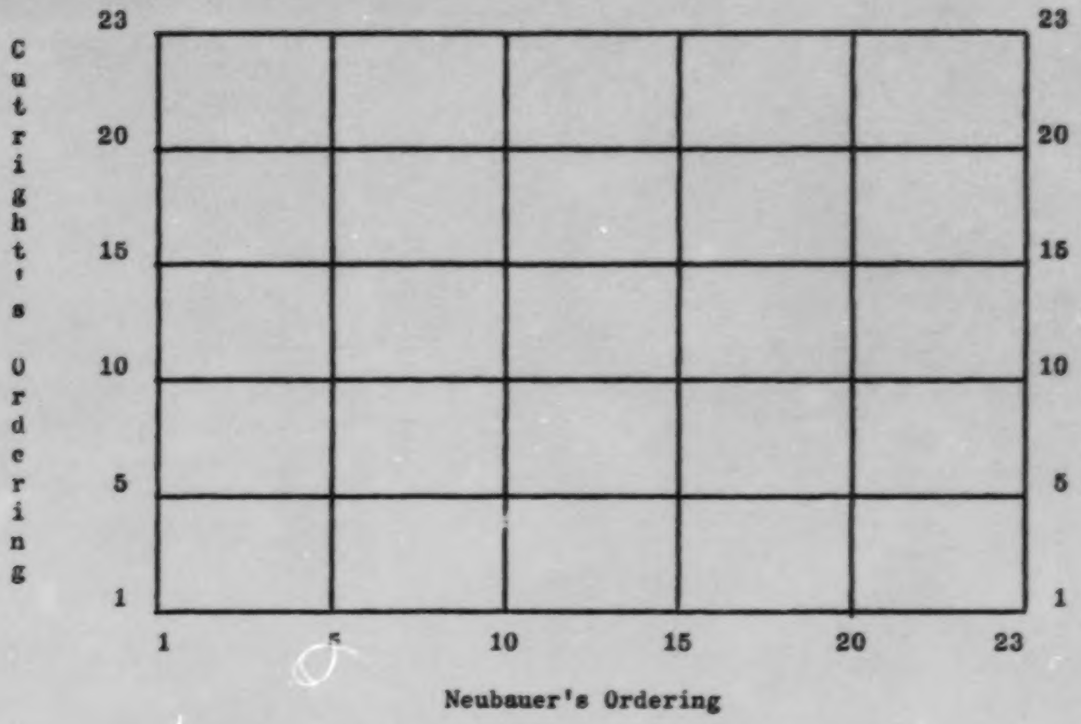
The consequences of adopting one set of measures or another can be seen by completing Figures 6.2 and 6.3. Column 1 of Figure 6.2 lists 23 countries as ranked by Neubauer on his Index of Democratic Performance. In Column 2 rank the same 23 countries according to their scores on Cutright's Index of Political Development. Where more than one country has the same score on Cutright's Index consider all those countries as the same ranking and then skip that number to determine the next ranking. (For example, since 8 countries have the highest score, 66, on Cutright's Index, consider all 8 countries as ranked first and then skip to ninth place for the next country.

Figure 6.2. Ordering of 23 Countries on Indices of Democracy in Two Recent Studies

| Neubauer | | Cutright | |
|---|---|---|---|
| 1 | Great Britain | | |
| 2 | France | | |
| 3 | Finland | | |
| 4 | Sweden | | |
| 5 | Netherlands | | |
| 6 | Belgium | | |
| 7 | Japan | | |
| 8 | Luxembourg | | |
| 9 | Norway | | |
| 10 | New Zealand | | |
| 11 | Denmark | | |
| 12 | Israel | | |
| 13 | West Germany | | |
| 14 | Italy | | |
| 15 | Canada | | |
| 16 | United States | | |
| 17 | Venezuela | | |
| 18 | Austria | | |
| 19 | Chile | | |
| 20 | Ireland | | |
| 21 | India | | |
| 22 | Switzerland | | |
| 23 | Mexico | | |

Now in Figure 6.3 plot the location of each of the 23 countries by its position on Cutright's ordering as the vertical axis and Neubauer's ordering as the horizontal axis.

Figure 6.3. Relationship of Cutright's Ordering of Democratic Countries to Neubauer's



If Cutright's and Neubauer's ordering of countries were identical, how would the cases be distributed on Figure 6.3?____________________

________________________________________________________

In fact, how are the cases distributed?____________________

________________________________________________________

________________________________________________________

How serious is the deviation of the actual distribution from the distribution that would appear if the orderings were identical?__________

________________________________________________________

________________________________________________________

What implications follow from the deviation between the actual distribution of cases and the expected distribution if the orderings were identical?

On the basis of Figure 6.3 what conclusions can you draw about the significance of alternative measures in ordering countries by extent of democracy?

## Assignment VII

## Historical Patterns of Political Development

Assigned Reading:

S. M. Lipset, Political Man (New York: Doubleday & Co., Anchor Books, 1963), Chapter 2; or S. M. Lipset, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," in Polsby, Dentler and Smith, Politics and Social Life, 1963.

H. H. Gerth and C. Wright Mills, from Max Weber: Essays in Sociology (New York: Oxford University Press, Galaxy Book, 1958), pp. 224-244.

William Flanigan and Edwin Fogelman, "Patterns of Political Development and Democratization: A Quantitative Analysis" (excerpts included in Appendix B)

An extremely important but often neglected approach among studies of political development is the analysis of historical patterns of change. Historical or longitudinal, analysis differs from cross-sectional analysis in the sense that the latter is confined to the study of variation in one or more variables at a single point in time. Longitudinal analysis, on the other hand, extends the comparison of changes in variables over some designated period of time, allowing one to abserve changes in one or more characteristics of a sampling unit (e.g., a nation-state, organization, etc.) over time. The importance of the time dimension can hardly be overemphasized. From research completed to date we have learned that the pattern or sequence of historical changes which occurred in the currently modernized societies was a crucial determinant in the development of the political institutions now in being.

Here we will trace the relationships between several indicators of modernization in an attempt to elucidate, by means of empirical analysis, the projected patterns of change outlined by Max Weber and Seymour M. Lipset. You will observe that although both readings are addressed to the question of democracy and development, each looks at the problem from a different perspective. Lipset's analysis points out some interesting consequences of various social and economic conditions for the prospects of democratic development. Weber, on the other hand, describes how the growth of bureaucratic institutions leads to changes in the distribution of wealth and the chances for democracy. The readings lead us to conclude that any analysis of democratic development along historical lines should at some early point evaluate the impact of concurrent changes in a system's bureaucratic capacity and its pattern of economic development.

Max Weber's essay, "Bureaucracy," represents only a small part of his classic work Wirtschaft und Gessellschaft written early in this century.

The portion you have been assigned to read illustrates one aspect of Weber's concern with the impact of modern bureaucratic structures on capitalistic economies and democratic institutions. For our purposes, let us try to reconstruct one of his major themes.

1) What, according to Weber, is the relationship between the development of bureaucratic institutions and democratization? (For example, what are the consequences of changes in one for changes in the other? Is the relationship a linear one, that is, does change in one produce an "equivalent" change in the other? or what?)

2) What factors does Weber suggest act as intervening variables thereby weakening the relationship between the historical development of bureaucracies and democratization? How do they modify the relationship?

As you will have no doubt observed, Weber's effort to trace the relationships between bureaucratic structures and democratic development reveals an extremely complex configuration of institutional development and historical change and one that leads to no simple empirical "solution."

Aside from the problems of defining such concepts as "bureaucracy," "democracy," etc., of dealing with changes occurring simultaneously at several levels of society, etc., the very notion of historical change introduces an important variable that we have up to this point not considered—time. The variable time is of course an underlying dimension in any historical or longitudinal analysis. If, for example, we are interested in describing the temporal sequence of certain events, we must give explicit recognition to the units of time comprising our observational period.

One variant of time-series analysis is the study of patterns of change. The paper by Flanigan and Fogelman describes a procedure by which several patterns of change, e.g., in terms of the increase or decline of governmental publications, may be constructed using historical data. Since the paper also provides quantitative time series data for several other variables that Weber and Lipset deem important for democratic development, there is some value in our assessing the usefulness of these measures before attempting to describe these patterns. (See Appendices B and C)

3) What are the measures of political development and democratization used by Flanigan and Fogelman?

4) How are scores determined for the 29 countries on the measures of political development and democratization? Can the scoring procedures be checked?

5) On the basis of the scores in Figures 1 and 6 in Appendix C, Flanigan and Fogelman identify four patterns of political development and four patterns of democratization. How are these patterns determined? Do you agree with this classification of countries into four patterns? What alternative classifications would you suggest?________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

6) Complete Table 1 below using the same classification of patterns as described by Flanigan and Fogelman.

Table 1

Governmental Publications

| Democratization | Continuous low development | Prolonged moderate development | Moderate to high development | Early high development |
|---|---|---|---|---|
| Consistently democratic | | | | |
| Moderately democratic | | | | |
| Predominantly undemocratic | | | | |
| Consistently undemocratic | | | | |

7) Summarize your findings from Table 1.___________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

8) Refer back to your responses to questions 1) and 2) in this exercise. Does Weber suggest any variables that might account for your findings in question 7)? What additional variables would you use?________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

We have seen that the growth of democratic political systems is not necessarily fostered by the increasing capacity of national bureaucracies. Furthermore, according to Weber, bureaucratic growth may in some ways act as a powerful counterforce to democratic development. If the consequences of bureaucratization are always to some extent indeterminate, what problems does this pose for transitional societies, for industrial societies? Some scholars, for example, have argued that the evolution of a "managerial class," or "meritocracy," in industrializing societies is already presenting a severe threat to existing democratic institutions. However just as a thoughtful scholar is never completely satisfied with any single explanation of complex phenomena, students of political development are challenged to look to other worthy explanations of the developmental process. An important contribution to this body of literature is Lipset's article "Some Social Requisites of Democracy."

Lipset's article draws our attention to a number of social conditions that, he argues, "support" democracy. Let us select one such condition, that of economic development.

9) According to Lipset, in what ways does economic development "support" democracy?________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

Based on his analysis of 50 countries, Lipset concludes that the level of national wealth, as defined by several operational indices, is, on the average, higher in democratic countries. Note, however, that by applying single time-point data, Lipset is thereby precluded from drawing conclusions about relationships between historical patterns of democratization and rates of economic development. For example, does it make a difference for a country's political development whether its industrialization began early or late, or proceeded at a slow or rapid pace? What are the chances for democracy in societies just beginning to industrialize? To begin to answer these questions we must turn to historical evidence.

First, we need an indicator of economic development. Flanigan and Fogelman selected a measure of agricultural employment for their indicator of economic development.

10) What are the advantages--and disadvantages--of this indicator?

Refer to Appendix C. Figure 7. Index of Agricultural Employment. Note that data has been collected for many but not all countries listed. For our purposes, we will examine only those countries where data is recorded for the decades 1910 and 1950 for a total of 16 countries as listed below.

Indicate on the chart below the numeral corresponding to each country's pattern of democratization as determined by Flanigan and Fogelman. (See Appendix B, pp. 9-10)

| | Pattern of Democratization (I,II,III,IV) | Proportion of labor force leaving agricultural employment (in %) |
|---|---|---|
| 1. Argentina | | |
| 2. Burma | | |
| 3. Canada | | |
| 4. Egypt | | |
| 5. France | | |
| 6. Germany | | |
| 7. Hungary | | |
| 8. India | | |
| 9. Italy | | |
| 10. Japan | | |
| 11. Mexico | | |
| 12. Portugal | | |
| 13. Spain | | |
| 14. U.S.S.R. | | |
| 15. United Kingdom | | |
| 16. United States | | |

Our next step is to create an index for the rate of economic development. Simply subtract each country's score for the decade 1950 from its score for the decade 1910. The difference expressed as a percentage indicates the proportion of the labor force which has moved out of agricultural employment over the forty year span and will serve as our index of the rate of economic development. List the scores for each country in the chart above.

Based on the information in your chart, complete Table 2 below.

Table 2

| | | Patterns of Democratization | |
|---|---|---|---|
| | | I and II | III and IV |
| Proportion of labor force leaving agricultural employment | 11% or less | | |
| | 12% or more | | |

11) What does Table 2 indicate concerning patterns of democratization in relation to the rate of economic development (i.e., change in agricultural employment)?

In an attempt to clarify the observed pattern in Table 2, let us extend our analysis by controlling for a third variable--the size of agricultural labor force in the decade 1910. Here, we will distinguish between countries whose labor force in the decade 1910 was relatively large from those countries whose labor force was small.

Complete Table 3 but include only those countries whose score for the decade 1910 is 56% or more. Complete Table 4 and include only those countries whose score for the same decade is 55% or less.

Table 3

Large Agricultural Labor Force - 1910

| | | Patterns of Democratization | |
|---|---|---|---|
| | | I and II | III and IV |
| Proportion of Labor force leaving agricultural employment | 11% or less | | |
| | 12% or more | | |

Table 4

Small Agricultural Labor Force - 1910

| | | Patterns of Democratization | |
|---|---|---|---|
| | | I and II | III and IV |
| Proportion of labor force leaving agricultural employment | 11% or less | | |
| | 12% or more | | |

12) What additional information does controlling for size of agricultural labor force give you regarding the relationship between patterns of democratization and change in agricultural employment?

13) What limitations in the data and the analysis might affect the validity of these findings?

14) What additional kinds of analysis can you suggest applying historical data to problems of democracy and political development?

## Assignment VIII

## Social Mobilization and Political Development

Assigned Reading:

Karl W. Deutsch, "Social Mobilization and Political Development," in Finkle and Gable, eds., *Political Development and Social Change*, 1966, pp. 225-226.

William Flanigan and Edwin Fogelman, "Patterns of Political Development and Democratization: A Quantitative Analysis" (excerpts included in Appendix B).

In the last exercise we observed that historical patterns of democratic development are related in interesting ways to patterns of bureaucratization and economic growth. Do other aspects of historical development contribute to the likelihood that democratic regimes will emerge and flourish during industrialization? What effect, for example, does rapid—or slow—urbanization have on societies attempting to introduce modern participatory political institutions? Did countries which became democratic by the end of the 19th century stand a better chance of sustaining peaceful change than did countries just beginning to install democratic regimes? If so, why? Questions such as these have long concerned students of political development. Almost invariably, however, attempted solutions have been met with a lack of adequate historical data, of appropriate indicators for useful theoretical concepts, and of sufficiently powerful models and theories of the development process. More recently, a number of scholars have encouraged further use and refinement of the concept *social mobilization*. The version of this concept, as introduced to students of political development by Karl Deutsch purports to meet, at least in part, some of the objections raised against earlier solutions to the kinds of questions and research strategies we have just outlined. Are these assertions justified?

1) To what aspect of modernization does the term *social mobilization* refer? What assumptions about the modernization process does Deutsch make?

2) What concepts and methods of analysis underlie Deutsch's model? What kinds of data are required?

3) What are the advantages of viewing modernization in this way?

One consequence of social mobilization, notes Deutsch, is that it "brings with it an expansion of the politically relevant strata of the population." Another important consequence, he adds, is the creation of new demands on the political system, based upon the needs of these newly politicized groups. Social mobilization, then, implies some increase in participation and in demands and some subsequent impact on governments which are more or less capable of sustaining these demands. This raises the question: under what conditions are governments capable of meeting new demands? For example, does it make a difference whether mobilization advances rapidly or slowly? What, for example, are the effects of rapid urbanization on countries attempting to modernize? Can governments sustain democratic reforms in societies undergoing major population shifts from village to city, from farm to factory? How can we proceed to research these questions?

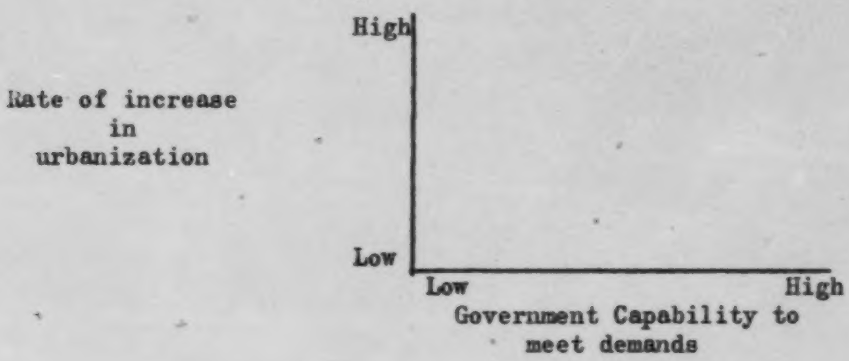
A first step in this investigation must be to arrive at a useful definition of the term "government capability." Here, we suggest that one important measure of governmental capability, and one particularly relevant to modernizing societies, is the probability that attempts to meet demands for greater political participation will be successful. Such attempts might consist of the extension of suffrage, the exposure of more, and especially the more important, political offices to democratic procedures, and other similar political reforms.

Then, let us ask, what "conditions" associated with a nation undergoing modernization are presumed to have some effect on governmental performance? What kinds of social changes would seem to imply added, or fewer, burdens on the political process? We have selected an indicator of social mobilization from the list in Deutsch (Table 1, Group II, p. 218), "Change from rural to urban residence" or, rate of urbanization, for reasons of convenience and utility. First, rates of change in urbanization is one indicator included in the class of variables which, according to Deutsch, is "related to the capabilities of the government for coping with these burdens." Second, urbanization data tends to be more reliable and complete than that for other relevant indicators.

4) Based on evidence and assumptions implicit in Deutsch's model, how is the rate of urbanization related to the capabilities of a government? Or, more precisely, what is the expected relationship between a government's ability to meet increasing demands for participation and that country's rate of increase in urbanization? What kinds of evidence does Deutsch state, or imply, are relevant to this question? ______________________________

5) Trace the expected relationship in Figure below:

Figure 1



Let us see whether this expected relationship is supported by further analysis. By applying the data in Appendix C, we will create an operational measure for each of the two variables--rate of urbanization and governmental capability to meet demands. From the information in Figure 8. Index of Urbanization we will construct an indicator of the rate of urbanization, operationally defined as the arithmetic difference between the urbanization score of the decade prior to, and the score of the decade following, an attempt to establish democratic procedures. (See Appendix B, pp. 10-11 for definition of urbanization.)

Our indicator for governmental capability is derived from data in Figure 2. Index of Democratic Succession. (See Appendix B, pp. 5-6) Government capability will be defined as the extent to which a government is "successful" in its attempts to establish a more democratic procedure for selecting its chief executive official. More specifically, by the phrase "attempt to establish a more democratic procedure in selecting its chief executive official" is meant a situation in which the chief executive is selected at least once by a "democratic" procedure where previously succession had been either "semi-democratic" or "non-democratic"; or is selected at least once by a "semi-democratic" procedure where previously succession had been "non-democratic." By the phrase "extent to which a government is 'successful'" is meant the number of uninterrupted decades which pass, following the original attempt, within which time no attempts are made to establish a less democratic procedure. (Or, stated differently, before which time an attempt is made to establish a less democratic procedure.)

Since our data for urbanization (Figure 8) are considerably less complete than the data for democratic succession (Figure 2), we must limit our analysis to those countries and decades for which urbanization data is available. Initially, then, we will consider only those countries listed in Table 1 (below). In addition, since our criteria for distinguishing "more successful" from "less successful" countries rests on information about the decades which follow attempts to establish democratic procedures, it is necessary to forgo consideration of attempts made just prior to 1950. In order to lose as little information as possible, but at the same time to give adequate time for attempts to be judged as successful or unsuccessful, we will not include attempts made after the decade 1930. To be considered a successful attempt, the newly established democratic procedure must be sustained over a period of at least three continuous decades. Unsuccessful attempts are those which are sustained for no longer than, and possibly less than, two continuous decades. Finally, since we wish to apply our coding procedure consistently for each case, we will include only those attempts for which urbanization data is available for the decade immediately prior to and the decade immediately following the attempt.

6). Complete Table 1.

Table 1

| | Country | Period of observation of attempts made (inclusive) | Decade attempt made | Number of Continuous successful decades | Success of attempt (S=3 or more decades) (U=1 or 2 decades) | Rate of urbanization |
|---|---|---|---|---|---|---|
| 1. | Argentina | 1880 - 1930 | 1910 | 2 | U | +5 |
| 2. | Brazil | 1900 - 1930 | | | | |
| 3. | Burma | 1890 - 1930 | | | | |
| 4. | Canada | 1870 - 1930 | | | | |
| 5. | Chile | 1870 - 1930 | | | | |
| 6. | Colombia | 1900 - 1930 | | | | |
| 7. | Egypt | 1890 - 1930 | | | | |
| 8. | France | 1810 - 1930 | | | | |
| 9. | Germany | 1820 - 1930 | | | | |
| 10. | Hungary | 1860 - 1930 | | | | |
| 11. | India | 1890 - 1930 | | | | |
| 12. | Indonesia | 1900 - 1930 | | | | |
| 13. | Italy | 1810 - 1930 | | | | |
| 14. | Japan | 1900 - 1930 | | | | |
| 15. | Mexico | 1900 - 1930 | | | | |
| 16. | Philippines | 1900 - 1930 | | | | |
| 17. | Spain | 1900 - 1930 | | | | |
| 18. | Switzerland | 1910 - 1930 | | | | |
| 19. | Turkey | 1900 - 1930 | | | | |
| 20. | U.S.S.R. | 1900 - 1930 | | | | |
| 21. | United Kingdom | 1810 - 1930 | | | | |
| 22. | United States | 1820 - 1930 | | | | |

7) Based on information in Table 1, complete Figure 2 below:

Figure 2

Success of Attempts to Establish Democratic Procedures and Rate of Urbanization

| | | Number of Continuous Successful Decades | |
|---|---|---|---|
| | | 0 - 2 decades unsuccessful | 3 or more decades successful |
| Rate of Urbanization | 5% or more | | |
| | 0 - 4% | | |

8) What does Figure 2 indicate concerning the success of attempts to establish democratic procedures and the rate of urbanization?______________

________________________________________________________________

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________________________________________________________________

________________________________________________________________

9) How well do your findings in Figure 2 correspond with your expected relationship in Figure 1?________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

10) How might our choice of indicators for governmental capability and rate of urbanization affect the correspondence between the expected relationship and the observed relationship______________________________

________________________________________________________________

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11) What other limitations in the data and the method of analysis might affect the validity of these findings?

12) What additional kinds of problems relating to social mobilization might be interesting to investigate?

## Assignment IX

## Political Leadership in the Development Process

Assigned Reading:

David Apter, The Politics of Modernization (Chicago: University of Chicago Press, 1965), Chapter 5.

Wendell Bell, "Social Change and Elites in an Emergent Nation," in H. R. Barringer, *et al.*, Social Change in Developing Areas (Cambridge, Mass.: Schenkman Publishing Co., 1965), pp. 155-205.

Daniel Lerner, The Passing of Traditional Society (Glencoe, Ill.: Free Press, 1958), Chapter 11.

Lester Seligmann, "Elite Recruitment and Political Development," in Finkle and Gable (eds.), Political Development and Social Change (New York: John Wiley & Sons, 1966), pp. 329-338.

Edward Shils, "The Intellectuals in Political Development of New States," in Finkle and Gable (eds.), Political Development and Social Change (New York: John Wiley & Sons, Inc., 1966), pp. 338-365.

Though, as we have already seen, some scholars emphasize the importance of social and/or economic forces on the modernization and political development process, others view leaders, military, intellectual, economic, or bureaucratic, as fundamental to the political development process. Some, for example, interpret the successful Japanese response to the challenges of industrialization and Western expansionist foreign policy as largely a result of the strong development of the Japanese elite after the Meiji Restoration in 1867.

The concept of political leadership has been interpreted and defined in many different ways. Some refer to leadership as the quality of interpersonal relationships between leaders and their followers--or simply as an influence relationship between A and B. Some are concerned with the relationship of leadership to particular political situations, groups, or institutions. Still others are interested in the psychological qualities of leaders and classify them along certain dimensions--e.g., democratic-authoritarian. Very probably the usefulness of any schema or definition of political leadership will depend on the nature of the research problem itself. For this exercise it is necessary only that you be aware of the variety of interpretations and definitions available to you and that you apply whichever working definitions which seem to be most appropriate, given your task.

Here, we are interested in two aspects of political leadership. First, we shall identify these elites in terms of their importance at different stages of political development. Second, we shall examine the relationships between the particular composition of elite groups and the nature of political development observed in their respective countries.

Do the assigned reading.

a) In the chart below, list the elites one might expect to find in countries at each of the three levels of political development. You may distinguish between elites according to occupation or profession, educational attainments, social background, etc. It may be helpful to identify leaders with respect to the particular sector in which they are most prominent—e.g., political, economic, social (status and prestige) sectors.

## ELITES AND STAGES OF DEVELOPMENT

| | Traditional | Transitional | Modern |
|---|---|---|---|
| Political | | | |
| Economic | | | |
| Social | | | |

Do you observe any overlapping of the same elite groups in more than one of the columns, i.e., stages of development? How would you explain this?

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Do you find any patterns or trends in the emergence of elite groups that are closely related to the stages of development?____________________

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Which groups of elites become increasingly important with increasing modernization? What do they have in common?____________________

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Which elites become decreasingly important with increasing modernization?

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One interesting aspect of elite-type analysis in the developing countries is the phenomenon of transition, i.e., periods of time in which certain elites emerge into positions of power and prestige while others experience a decline. You have already observed some general over-all patterns of transition, if you have answered the second question on this page. Now, we shall attempt to explain the "rise and fall" of elites by first, focusing on particular transition periods; and, then, examining the social and economic characteristics of societies at each of these periods.

Assuming we could identify, in the real world, that period of transition between traditional and developing, what social and economic forces would you expect to find most closely associated with the emergence of new elite groups?

Would you expect to find the same social and economic forces associated with the ascendance of new elites in the period between developing and modern? Why? or why not?

Do you feel that your explanations are sufficient to account for the present composition of political elites in a given country in, say Latin America, South-east Asia, or Africa today? If so, why? If not, why not?

In order to familiarize yourself with the methods and data used in elite analysis, you are asked to select *3* political leaders representing countries from each of the three stages of development--traditional, transitional, and modern--for a total of 9 political leaders. You are to describe, in some detail, the social background characteristics of the leaders. (You may select Presidents, Prime Ministers, Congressmen, or diplomats--or representatives of some other important national political body.) For each leader, find the following information:

a) Name
b) Birth date and geographical origin
c) Social-economic class background
d) Education (where, what level completed, professional degrees, etc.)
e) Career pattern (major occupations, offices held, year, etc.)
/For biographical information consult *Who's Who*, *Statesman's Yearbook*, autobiographies, biographies.

Fill in the following chart.

Characteristics of Political Leaders

| | Similar | Different |
|---|---|---|
| Traditional | | |
| Transitional | | |
| Modern | | |

What are the interesting similarities and differences of the characteristics of the political leaders in and across the three stages of development?________________________________________________

________________________________________________________________

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________________________________________________________________

What conclusions emerge based on your answer to the previous question?

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

## Assignment X

## Political Parties and Political Development

Assigned Reading:

Samuel P. Huntington, Political Order in Changing Societies (New Haven: Yale University Press, 1968), Chapter 7: "Parties and Political Stability."

Since the beginning of the nineteenth century, political parties have signified, perhaps more than any other political institution, the modern age in politics. The historical development of political parties--as we know them today--has been closely associated with the increased mobilization of formerly disenfranchised political and social groupings, the rise of mass-based political ideologies, the emergence of modern, well-financed party organizations, and the ascendance of elected politicians into foremost positions of power.

Political scientists have recently begun to examine historical and contemporary evidence in such a way as to lend more credibility and sophistication to our knowledge about political parties and their significance in modernizing societies. Some scholars, for example, have promoted systematic investigations of party functions and party organizational structures. Others have made extensive analyses of voting behavior among various groups in the electorate. Still others have focused on the relationships between attributes and party systems, such as the extent of competitiveness, stability, the number of parties, etc. and economic development, modernization, or historical experience. In this exercise, we will look at several analytical dimensions of political party systems and examine them within the context of modernization.

An important distinguishing characteristic of party systems is the extent to which individual political parties must compete in order to win political offices. In democratic societies, for example, political parties must vie for the support of the electorate while in totalitarian or one-party systems electoral competition plays a minimal role. Initially, it will be useful to see how competitiveness in party systems is distributed in our sample of countries. For this purpose, the following table requires that you first classify the 116 nations according to geographic area or region and then indicate the extent of competitiveness in the electoral system. See Variable 1 ("Geographic Location") and Variable 29 ("Competitiveness of Electoral System") in the Codesheet. Then see the Appendix for each country's ranking. (Note: Do not include countries ranked as "ambiguous" or "unascertained.")

Table 1

| Region | Country | Competitive | Partially competitive | Non-competitive |
|---|---|---|---|---|

Table 1 (con't.)

| Region | Country | Competitive | Partially competitive | Non-competitive |
|---|---|---|---|---|

Summarize as succinctly as possible your findings in Table 1.__________

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

What, if any characteristics, other than geographic region, do those countries share which are most competitive? least competitive?____________

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

Prominent among some students' classifications of party systems is the number of parties competing for political office. Huntington, for example, after tracing the historical phases of party development in tabular fashion, illustrates the relationships between the number of parties in a system and other characteristics (party strength, party stability, military coups, and level of literacy).

Complete Table 2 using the data from Table 1 and, for the same countries, data from the Appendix (Variable 41: Quantitative Party System).

Table 2

Number of Countries

| Quantitative Party System | | Non-competitive | Partially competitive | Competitive |
|---|---|---|---|---|
| | One-party | | | |
| | dominant party | | | |
| | one-and-a half party | | | |
| | two party | | | |
| | multi-party | | | |

Competitiveness of Electoral System

Based on your findings in Table 2, summarize the relationship(s) between competitiveness and the number of parties in the system.

How do you explain the absence of a simple, direct relation between the two indicators?

Huntington offers the hypothesis that party strength is closely related to the number of parties in a system, but only after "controlling" for the level of modernization.

What does it mean to "control" for a third variable (in this case, the level of modernization)?

What indicators would you use to distinguish countries with respect to a) levels of modernization? b) party strength?

Describe the procedure you would follow in order to test Huntington's hypothesis.

## Assignment XI

## The Military and Political Development

**Assigned Reading:**

S. E. Finer, The Man on Horseback: The Role of the Military in Politics (New York: Praeger, 1962), Chapters 1 and 7.

Morris Janowitz, The Military in the Political Development of New Nations (Chicago: University of Chicago Press, 1964), Chapters 1 and 2.

David Rapoport, "A Comparative Theory of Military and Political Types," in Samuel P. Huntington (ed.), Changing Patterns of Military Politics (Glencoe, Ill.: The Free Press, 1960).

William Gutteridge, Military Institutions and Power in the New States (London: Pall Mall Press, 1964) Chapters 1, 8 and 10.

**Suggested Reading:**

John J. Johnson, The Role of the Military in Underdeveloped Countries (Princeton: Princeton University Press, 1962).

Edwin Lieuwen, Arms and Politics in Latin America, Revised Edition (New York: Praeger, 1961).

Arthur S. Banks and Robert B. Textor, A Cross-Polity Survey (Cambridge, Mass.: M.I.T. Press, 1963), Introductory Chapter.

One of the most interesting and perhaps most significant subjects in the study of political development is the relationship between the military organization and civilian political institutions. Two general questions are often asked with respect to the role of the military in political change. First, what political and economic characteristics of a developing nation facilitate the military's involvement in domestic politics? Second, what are the capacities of the military to supply effective leadership for a new nation's rapid economic development and social modernization?

In this exercise we shall address ourselves to these questions, but only after having first broken them down into several more manageable questions. Our objective is to formulate hypotheses explaining the relationship between the military and certain measures of modernization that are susceptible to quantitative or statistical techniques. Since you will be asked not only to create several hypotheses but also test them and interpret your results, you will need to become familiar with two kinds of methodological problems involved in such an analysis. First, we shall be making comparisons between a large number of countries. In order to make valid comparisons, one must be sure to select categories or units of analysis that are comparable or equivalent in each of the countries selected. If we were to compare the political influence of the military in several countries, we must first define the term "military" in such a way that it identifies an organization performing the same function in each country. What may appear to be similar institutions, at first glance, may often be quite different in more than one respect: military officers may perform "civilian" functions in some societies; police and para-military units may be engaged in "military" activities, etc. Although you will not be expected to become an "expert" in the task of differentiating military structures and functions from civilian ones, you should be aware of the kinds of difficulties faced by scholars in their attempts to make these important, but often subtle distinctions.

This first methodological problem in cross-cultural studies is often referred to as the problem of comparability. It is essentially the problem of defining variables in such a way that they have the same generic meaning in each culture. The next step, then, is to determine the extent or degree to which that variable is "found" in each cultural setting. By measuring or scaling a variable we can compare several cultures in terms of the relative (or sometimes absolute) amount of that variable's presence in each culture (e.g., high, medium, low, absent, etc.). In attempting to compare the degree to which the military may influence other political bodies, you first have to establish a scale or measurement of influence that clearly distinguishes between different levels or degrees of influence. Once we have ordered or ranked each country with respect to military influence, for example, we might then wish to determine the extent to which military influence is associated with another variable, say, level of economic development. By scaling variables in this manner--and our scales may often be quite simple--we are able to make fairly precise statements about the nature of relationship between two or more variables, simply because we can apply techniques of analysis that otherwise could not be used.

## PART 1

In order to become familiar with the models or typologies of the military used in cross-cultural studies, look at the suggested readings under the heading "military."

For each author, list and briefly describe his typology of the military.

________________________________________

________________________________________

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________________________________________

Along what dimensions does each author distinguish between his military societies; i.e., what criteria does he use to differentiate between one "type" and another "type"? Are these criteria, or standards of comparison, made explicit?

Since most of these models of military-civilian societies attempt, in one way or another, to compare the nature or degree of influence the military exercises in political decision-making, it might be helpful to distinguish between each author's definition of "influence" or, perhaps, "participation in politics."

How does each author define, or seem to define, the term "influence"? "Political participation"?

What observable forms do these authors suggest "influence" may take?

Since our objective is to examine some relationships between military participation in politics and certain indicators of modernization, you should review the readings that deal specifically with questions of this nature. You might ask yourself: How is the level of political development associated with military participation in domestic politics? To what extent might the military behave differently in an underdeveloped country? What measures of political or economic development appear to be most appropriate in such an analysis?

What hypotheses would you suggest to explain the relationship between the degree of military participation in domestic politics and:

the level of economic development?

the level of political culture? (See Finer)

the strength of civilian political institutions; e.g., political parties, the legislative branch, executive branch, interest groups, etc.?

1. Check the codebook which explains the manner in which political and economic variables are scaled and coded.
2. Re-examine your hypotheses and determine which variables--from the list of these available in the codebook--you wish to use in defining your terms.

You are now asked to test these hypotheses using data from 70 countries. In order to do this you should follow either of the two following procedures (selected by your instructor):

## Option One

## Percentage Comparison

Percentage comparison and analysis of data provided, i.e., the printout which you received for the assignment on social-economic correlates of political development.

1. Check the codebook which explains the manner in which the variables have been scaled and coded.

2. Re-examine your hypotheses and determine which variables--from the list of these available in the codebook--you wish to use in defining your terms.

3. Re-examine your hypotheses and state them in bivariate form, i.e., compare only two variables or sets of variables. For example, the relationship between military participation and economic development might be examined.

4. Re-examine your hypotheses and state them in such a fashion that the direction of association (positive or negative) is clear. For example, "the level of economic development is negatively associated with the degree of military participation." Also specify the degree of association expected, "strong," "weak," etc.

5. Working with your selected variables and your country based data from the computer printout construct two tables which present the frequency distributions and percentages.

## Table 1

Table 2

How well did your hypotheses "meet the test?"____________________

How would you restate your hypotheses on the basis of these findings and, perhaps, some second thoughts?____________________

What difficulties did you face in formulating your hypotheses with respect to the nature of the variables, i.e., their precision, clarity, or general utility and significance?____________________

## Option Two

## Statistical Analysis

1. Check the codebook which explains the manner in which the variables have been scaled and coded.

2. Re-examine your hypotheses and determine which variables—from the list of these available in the codebook—you wish to use in defining your terms.

3. Re-examine your hypotheses and state them in bivariate form, i.e., compare only two variables, or sets of variables. For example, the relationship between military participation and economic development might be examined.

4. Re-examine your hypotheses and state them in such a fashion that the direction of association (positive or negative) is clear. For example, "the level of economic development is negatively associated with the degree of military participation." Also specify the degree of association expected, "strong," "weak," etc.

5. Read carefully the accompanying reading on rank correlation methods, and especially Kendall's Tau-Beta.

6. Pick up a set of data punch cards and the particular statistical program that has been suggested. This is referred to as an analysis deck.

7. Locate the variables you wish to use on the appropriate columns of the punch cards. Make a list of these columns. You will need this list when the programmer consultant helps you set up your particular program. (Ordinarily, you will simply select the standard computer library routine which includes non-parametric statistics like Kendall's Tau-Beta.) Typically, you are asked to submit control cards for the routine you select.

8. With the assistance of the programmer consultant, make up your "statement" telling the computer exactly what operations to perform.

9. Submit your completed analysis deck to the computer center. Pick up the analysis deck and printout when ready.

10. Examine the printout sheet carefully to see whether it performed correctly the operations you specified. The programmer may assist you in interpreting the printout if you have trouble.

## Statistical Analysis

Kendall's tau-beta is a measure of the degree of association or correlation between two rank ordered variables. Let us start with a simple example. Suppose we wanted to measure the degree of association between course grades in political science and course grades in mathematics. We know that five students received the following grades: (For the purposes of this illustration, we will use an unusually small number of cases.)

| Student | Grade in Political Science | Rank in Political Science | Grade in Mathematics | Rank in Mathematics |
|---|---|---|---|---|
| Al | B+ | | C | |
| Ben | C | | C+ | |
| Don | C+ | | B | |
| Ed | A- | | B+ | |
| Sam | B | | A | |

Complete the example by determining each student's rank in the courses.

Arranged in a different way, we have:

| | Al | Ben | Don | Ed | Sam |
|---|---|---|---|---|---|
| Rank in Political Science | 2 | 5 | 4 | 1 | 3 |
| Rank in Mathematics | 5 | 4 | 3 | 2 | 1 |

Now, let us compare the ranks of each student with every other student. If the ranks are in the natural order (1,2,3,...10) we will score this +1; if not we will score this -1. Comparing Al with Ben, for example, we see that Ben (rank 5) ranks lower than Al (rank 2) in political science, but Ben (rank 4) ranks higher than Al (rank 5) in math. Thus we score the Al - Ben pair +1 in political science (2 and 5 are in a natural order) and -1 in math (5 and 4 are in descending order). Comparing Al with Don we see that their ranks in political science are in the correct order (2 and 4) and their ranks in math are in the descending order (5 and 3). Continuing for all possible pairs, we have the following indications of the relative ranks of the students in each course when each student is compared with the others.

Table 3

| Pair | Political Science Rank Order Score | Math Rank Order Score | Overall Score |
|---|---|---|---|
| Al - Ben | +1 | -1 | -1 |
| Al - Don | +1 | -1 | -1 |
| Al - Ed | -1 | -1 | +1 |
| Al - Sam | +1 | -1 | -1 |
| Ben - Don | -1 | -1 | +1 |
| Ben - Ed | -1 | -1 | +1 |
| Ben - Sam | -1 | -1 | +1 |
| Don - Ed | -1 | -1 | +1 |
| Don - Sam | -1 | -1 | +1 |
| Ed - Sam | +1 | -1 | -1 |
| | Net Score (S): | | |

We are interested in measuring the degree of correlation between ability in political science and math. Thus, we will need an overall measure of the extent to which rank scores in political science and rank scores in math vary together. That is, if two students are ranked in the same order in both subjects (either +1 in both or, -1 in both) their positions in the two subjects are related. If the rank scores move in opposite directions, this would indicate lack of co-variation or correlation. By simply multiplying the political science and math rank order scores in Table 3 we get a +1 if they vary together (+1) x (+1) = +1 or (-1) x (-1) = +1; and -1 if the pair is not related (rank scores moving in opposite directions). Perform this multiplication in Table 3 to get the overall score. You should have 6 (+1)'s and 4 (-1)'s in the overall score column for a net score (S) of +2.

Kendall's rank correlation (tau) is simply:

$$\frac{\text{actual net score (S)}}{\text{Maximum Possible Score}}$$

The Maximum Possible Score (denominator) is the score we would have if the rank orders in both rows (viz courses) were exactly the same (perfect) correlation.) If this were the case, each pair would get an overall score of +1. (There could be no scores moving in opposite directions if all students were ranked the same in each course.) How many +1 overall scores would there be in this case? We can find out by simply counting the number of pairs. In any set of n people there are ½n (n-1) pairs. (If one person in a set of n persons paired with every other person in the set, there would be n-1 pairs. If all n people were so paired, there would be n times (n-1) pairs or n (n-1). Since we do not compare each pair twice--for example, we do not compare Al with Ben and then Ben with Al--the n (n-1) combinations are divided in half. Verify by counting the number of pairs in Table 3.)

Therefore:

$$\text{Kendall's tau} = \frac{S}{\frac{1}{2}\,n\,(n-1)}$$

In this case $S = +2;\ n = 5$

$$\text{thus tau} = \frac{2}{10} = .2$$

In the case of perfect rank ordering on both variables, S would equal ½n (n-1). If ½n (n-1) were substituted for S in the above formula for tau, we can see that tau would equal +1. (Any amount divided by the same amount is equal to 1.) Thus tau takes the value +1 if there is perfect positive correlation (and -1 in the case of perfect negative correlation.)*

In the case of completely random rank ordering; i.e., if the two rows of ranks had no relationship with each other there would be about as many negative (opposite pairs) contributions to the net score (S) as there would be positive contributions (covariant pairs). In this situation, the net score (S) would be zero or close to it and thus tau would be close to zero. Thus, values of tau close to zero would indicate little correlation.

In the social sciences, correlations are seldom close to perfect so values of tau near +1 or -1 are rarely found. A tau of .5 or .6 (about halfway between zero and +1) is considered quite high for social science data.

---

*Example of perfect negative correlation:

| | A | B | C | D | E |
|---|---|---|---|---|---|
| rank in X | 1 | 2 | 3 | 4 | 5 |
| rank in Y | 5 | 4 | 3 | 2 | 1 |

Each pair would contribute a -1 to the Overall Score.

The above formula is really Kendall's tau-alpha. Kendall's tau-beta is basically the same but takes into consideration ties in rankings. Suppose we were correlating two variables X and Y which were coded as follows:

| Variable X | Variable Y |
|---|---|
| 1. Very interested | 1. Agree |
| 3. Somewhat interested | 2. Depends |
| 5. Not interested | 3. Disagree |

Note that both variables (and their codes) are in a natural order (from strong to weak interest; from agree to disagree). Tau-beta cannot be used with variables that do not have an order underlying the classifications or codes. For example, the variable "religion" with classifications Protestant, Catholic, Jew has no one dimensional underlying continuum or ordering.

Suppose we took a few cards (cases) from the lab deck and we found that individual A was coded 1. on variable X and also 1. on variable Y; individual B was coded 1. on variable X and 2. on variable Y and so forth as follows:

Table 4

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| X | 1. | 1. | 1. | 3. | 3. | 3. | 5. | 5. |
| Y | 1. | 2. | 2. | 2. | 3. | 3. | 2. | 3. |

The code categories are, in essence, ranks. Let us compare pairs and score them as we did in the example above. We see that A and B are tied on variable X. There is no difference in rank and therefore we score this pair as zero. Continuing we have:

### Table 5

| Pair | Variable X Rank Order Score | Variable Y Rank Order Score | Overall Score |
|---|---|---|---|
| AB | 0 | +1 | 0 |
| AC | 0 | +1 | 0 |
| AD | +1 | +1 | +1 |
| AE | +1 | +1 | +1 |
| AF | +1 | +1 | +1 |
| AG | +1 | +1 | +1 |
| AH | +1 | +1 | +1 |
| BC | 0 | 0 | 0 |
| BD | +1 | 0 | 0 |
| BE | +1 | +1 | +1 |
| BF | +1 | +1 | +1 |
| BG | +1 | 0 | 0 |
| BH | +1 | +1 | +1 |
| CD | +1 | 0 | 0 |
| CE | +1 | +1 | +1 |
| CF | +1 | +1 | +1 |
| CG | +1 | 0 | 0 |
| CH | +1 | +1 | +1 |
| DE | 0 | +1 | 0 |
| DF | 0 | +1 | 0 |
| DG | +1 | 0 | 0 |
| DH | +1 | +1 | +1 |
| EF | 0 | 0 | 0 |
| EG | +1 | -1 | -1 |
| EH | +1 | 0 | 0 |
| FG | +1 | -1 | -1 |
| FH | +1 | 0 | 0 |
| GH | 0 | +1 | 0 |

S=

Compute the overall score in Table 5. (S should be 12 - 2 = 10). Note that zero times any number is zero. Thus in all pairs where there are ties on either or both variables nothing is added to the S score. This fact must be taken into consideration in computing the denominator of tau. If ties cannot contribute to the S score, we must subtract the total number of ties in each variable from the Maximum Possible Score so tau can achieve a value of +1 if we have perfect ordering.

Thus: Tau-beta =

$$\frac{S}{\sqrt{[\tfrac{1}{2}\, n\, (n-1) - T]\,[\tfrac{1}{2}\, n\, (n-1) - U]}}$$

where T = number of pairs tied on variable X

U = number of vairs tied on variable Y

If you are wondering where the square root came from, note that if there were no ties we would have

$$\text{Tau} = \frac{S}{\sqrt{[\tfrac{1}{2}\, n\, (n-1) - 0]\,[\tfrac{1}{2}\, n\, (n-1) - 0]}} = \sqrt{[\tfrac{1}{2}\, n\, (n-1)]^2}$$

$$= \frac{S}{\tfrac{1}{2}\, n\, (n-1)}$$

Computation of Tau-beta for Cross Tabulations

Let us arrange the data in Table 4 into a cross-tabulation table. Inside the table we will designate the individuals occupying the cells so that you can see exactly how the rearrangement took place.

Table 6

Variable Y

| Variable X | 1. | 2. | 3. |
|---|---|---|---|
| 1. | A | B,C | |
| 3. | | D | E,F |
| 5. | | G | H |

We can compute the S score with the data in this way. For example, looking at the upper left hand cell, (in which we find A), we note that B and C are in the same row (rank) and thus should contribute nothing to the S score when compared with A. However, D, E and F, G, H, which are below A and to the right, all have higher ranks than A on both variables. A, paired with each of these, would add +1 to the S score. Thus, A times the

Compute the overall score in Table 5. (S should be 12 - 2 = 10). Note that zero times any number is zero. Thus in all pairs where there are ties on either or both variables nothing is added to the S score. This fact must be taken into consideration in computing the denominator of tau. If ties cannot contribute to the S score, we must subtract the total number of ties in each variable from the Maximum Possible Score so tau can achieve a value of +1 if we have perfect ordering.

Thus: $$\text{Tau-beta} = \frac{S}{\sqrt{\left[\tfrac{1}{2}\, n\, (n-1) - T\right]\left[\tfrac{1}{2}\, n\, (n-1) - U\right]}}$$

where T = number of pairs tied on variable X

U = number of vairs tied on variable Y

If you are wondering where the square root came from, note that if there were no ties we would have

$$\text{Tau} = \frac{S}{\sqrt{\left[\tfrac{1}{2}\, n\, (n-1) - 0\right]\left[\tfrac{1}{2}\, n\, (n-1) - 0\right]}} = \frac{S}{\sqrt{\left[\tfrac{1}{2}\, n\, (n-1)\right]^2}}$$

$$= \frac{S}{\tfrac{1}{2}\, n\, (n-1)}$$

## Computation of Tau-beta for Cross Tabulations

Let us arrange the data in Table 4 into a cross-tabulation table. Inside the table we will designate the individuals occupying the cells so that you can see exactly how the rearrangement took place.

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Variable Y

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| 1. | A | B,C | |
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We can compute the S score with the data in this way. For example, looking at the upper left hand cell, (in which we find A), we note that B and C are in the same row (rank) and thus should contribute nothing to the S score when compared with A. However, D, E and F, G, H, which are below A and to the right, all have higher ranks than A on both variables. A, paired with each of these, would add +1 to the S score. Thus, A times the number of cases below it and to the right gives a positive contribution to the S score. To continue, B and C are tied on the Y variable, with those directly below (D and G). However, both B and C have higher ranks on both variables than E, F and H. Thus B times E, F and H plus C times E, F, and H adds to the S score. (You may want to check these combinations with the original computations of the S score for these data in Table 5.) In general we can say that if we look at any given cell, all cases below it and to the right contribute positively to S; we would multiply the number of cases in the given cell by the total number of cases in the given cell by the total number of cases below and to the right to compute positive contributions to the S score. We can also show that all cases below and to the left of a given cell are in the incorrect or descending order and thus would contribute negatively to the S score. Thus, if we look at the cell in which we find E and F, we note that G (below and to the left) has a lower rank on both variables. These two pairs (EG and FG) would contribute two (-1)'s to the S score. (Again, you may want to check these pairs and their scores with the original computations in Table 5.)

We have already noted that B and C are tied with D and G on the Y variable. This means that there are 6 pairs of ties in this instance (BC, BD, BG, CD, CG, and DG). You may wish to refer back to this example when we compute the denominator of tau-beta.

Table 6a

(Table 6 with number of cases in cells)

Variable Y

| Variable X | 1. | 2. | 3. | |
|---|---|---|---|---|
| 1. | 1 | 2 | 0 | 3 |
| 3. | 0 | 1 | 2 | 3 |
| 5. | 0 | 1 | 1 | 2 |
| | 1 | 4 | 3 | 8 |

0 indicates no cases

We will now compute S by looking at each cell across each row and score according to the rules outlined above:

Positive contributions to S (each cell times those cases below and to the right):

1 (1 + 2 + 1 + 1) + 2 (2+1) + LC + 0 (1+1) + 1 (1) + LC

(Last row is not used since no cases can be below it.)

Negative contributions to S (each cell times those cases below and to the left):

FC + 2 (0 + 0) + 0 (0 + 1 + 0 + 1) + FC + 1 (0) +2 (0 + 1)

"LC" indicates that cells in the last column are not used to compute positive contributions to S since there can be no cases to the right.

"FC" indicates that cells in the first column are not used to compute negative contributions to S since there can be no cases to the left.

P = Positive contributions to S = 1 (5) + 2 (3) + 0 + 1 = 12

Q = Negative contributions to S = 0 + 0 + 0 + 2 = 2

$$S = P - Q = 12 - 2 = 10$$

The denominator of tau-beta is:

$$\sqrt{\left[\tfrac{1}{2} n (n-1) - T\right] \left[\tfrac{1}{2} n (n-1) - U\right]}$$

where T = number of pairs of ties on variable X

We have already noted that the number of pairs in a set of n persons is ½ n (n-1). Thus,

T = ½ t (t - 1) where t = number in each set of people tied on a category of X.

In the above example (Table 6a) there is a set of 3 tied on category 1. of variable X; a set of 3 people tied on category 3.; and a set of 2 tied on category 5. thus there are,

½ 3 (3-1) + ½ 3 (3-1) + ½ 2 (2-1) pairs of ties on variable X.

Similarly, U = ½ u (u -1) where u = number in each set of people tied on a category of Y.

In this case u = ½ 1 (1-1) + ½ 4 (4-1) + ½ 3 (3-1)

T = 3 + 3 + 1 = 7

U = 0 + 6 + 3 = 9

You may wish to verify this by counting the zeros in the variable X and variable Y rank order scores in Table 5.

Finally,

$$\text{tau-beta} = \frac{S}{\sqrt{\left[\tfrac{1}{2} n (n-1) - T\right] \left[\tfrac{1}{2} n (n-1) - U\right]}}$$

$$= \frac{10}{\sqrt{\left[\tfrac{1}{2} 8 (8-1) - 7\right] \left[\tfrac{1}{2} 8 (8-1) - 9\right]}}$$

$$= \frac{10}{\sqrt{(21)\ (19)}} = .51$$

If two cross-tabulated variables are perfectly correlated, all cases would have the same ranks in each variable and thus all cases would fall along the diagonal of the table. For example,

| | 1. | 2. | 3. | |
|---|---|---|---|---|
| 1. | 3 | | | 3 |
| 2. | | 3 | | 3 |
| 3. | | | 3 | 3 |
| | 3 | 3 | 3 | 9 |

In the event of perfect correlation we would have perfect predictability; knowing someone was coded 1. on variable X would mean that we would know he was coded 1. on variable Y and so forth.

It should be noted that given the number of cases in each category; that is, given the marginal distributions of variable X and Y in Table 6a, we cannot possibly achieve a +1 tau-beta since all cases cannot be put on the diagonal and still add correctly to give the marginal totals. In other words, we are constrained by the distribution of cases in the categories of the variables we are correlating. For example, the closest we could come to a perfect correlation given the marginal totals in Table 6a is as follows:

Variable Y

| Variable X | 1. | 2. | 3. | |
|---|---|---|---|---|
| 1. | 1 | 2 | | 3 |
| 3. | | 2 | 1 | 3 |
| 5. | | | 2 | 2 |
| | 1 | 4 | 3 | |

(Table 6a with cases arranged as close to principle diagonal as possible given the marginal totals.)

This arrangement would give:

$$P = 1\ (2 + 1 + 2) + 2\ (1 + 2) + 2\ (2)$$

$$= 5 + 6 + 4 = 15$$

There would be no negative contribution to S with this arrangement. The denominator of tau-beta would be the same as that just computed. Thus, tau-beta for this arrangement which is as close to perfect as we can get is:

$$\frac{15}{19.9} = .75$$

How well did your hypotheses "meet the test"?

How would you restate your hypotheses on the basis of the findings and, perhaps, some second thoughts?

What difficulties did you face in formulating your hypotheses with respect to:

the nature of the variables, i.e., their precision, clarity, or general utility and significance?

the statistical technique applied?________________________________

## Assignment XII

## The Military and Political Development

### PART 2

In Part 1 of this exercise, we were interested, primarily, in the relationships between certain political and economic characteristics and military participation in politics. We discovered the fact that military participation in politics is a phenomenon both difficult to operationalize and difficult to explain in terms of our simple political and economic correlates. Perhaps, as further research is carried out--and the tools of analysis refined--we shall be able to explain with greater precision the extent to which military participation is related to different levels of development.

In this exercise, we shall look at the consequences, rather than the causes, of military intervention in domestic politics. We are interested in such questions as: What role does the military play in the political and economic development of countries in which it is a politically powerful, if not ruling, institution? Under what circumstances may the military become a positive developmental force in modernization? What characteristics of military organization seem to affect its attitudes and behavior towards modernization?

First, we might attempt to classify internal characteristics of military organizations that appear to be related to the political behavior and attitudes of military elites. We may begin by drawing a simple trichotomous scheme which distinguishes these characteristics to the extent they have different implications for development.

In the chart below, indicate which internal characteristics of the military may be associated with a positive orientation towards economic and political development; then indicate those associated with a negative orientation; finally, indicate which characteristics are clearly related to neither. You may either use the characteristics listed below or those suggested by your authors. In any case, be sure to briefly, but clearly, explain each one.

| | Positively Related to Modernization | Negatively Related to Modernization | Relationship Not Clear |
|---|---|---|---|
| Organizational Characteristics of the Military* | | | |

*For example, organizational goals; command of certain resources, skills and training; recruitment policies; ideology (professional and political); organizational cohesion.

Although the military may also be the ruling elite as, for example, in Egypt, Pakistan, etc., or may dominate domestic politics as, for example, in Burma, Indonesia, etc., the policies they support with respect to modernization are often quite dissimilar. For each of these four countries, evaluate the degree to which it has supported, or suppressed, social, political, and economic change. (Since we have no readily quantifiable indicators of "support" or "suppression" with regard to public policies for these countries, your answers will be somewhat impressionistic.)

| | Social Changes Supported or Suppressed | Political Changes Supported or Suppressed | Economic Changes Supported or Suppressed |
|---|---|---|---|
| Egypt | | | |
| Pakistan | | | |
| Burma | | | |
| Indonesia | | | |

From the information you have gathered for the four countries (above), how would you rank each of these countries on a scale from one to four, with "one" representing the country supporting the most change in each sector, and "four" the least.

| | Social Change | Political Change | Economic Change |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |

Assuming someone else were to rank the countries on the basis of information provided in your table, do you think he would arrive at exactly the same rankings? Why, or why not?

If you were to extend this analysis so that it included a very large number of countries, say, N, which you intended to rank from one to N along the same dimensions as you did above, what measures of change, in all three sectors, would you use? Could you use these measures in all the countries? Are they quantifiable?

What kinds of theoretical and methodological problems might you encounter attempting to determine the actual nature of public policy preferences of political elites? That is, how would you define "public policy?" How would you evaluate "preferences?"

# Appendix A*

## Part I

## The Code Sheet

**Variable 1:** Geographic Location (scaled in terms of distance from US)

0. North America
1. Caribbean & Central America
2. South America
3. West Europe & Scandinavia
4. East Europe
5. Middle East & North Africa
6. Central & South Africa
7. East Asia
8. South Asia
9. Southeast Asia & Australia

**Variable 2:** Size (in square kilometers)

1. Over 20 million
2. 7.5 - 20 million
3. 2 - 7.4 million
4. .75 - 1.9 million
5. 250 - 749 thousand
6. 75 - 249 thousand
7. 30 - 74 thousand
8. 10 - 29 thousand
9. Under 10 thousand

Source: Russett et al. Table 40

**Variable 3:** Total Population, 1961

1. Over 300 million
2. 70 - 300 million
3. 30 - 69 million
4. 20 - 29 million
5. 10 - 19 million
6. 6 - 9 million
7. 3.5 - 5.9 million
8. 2.0 - 3.4 million
9. Under 2 million

Source: Russett et al. Table 1

**Variable 4:** Population Density (per sq. kilometer)

0. Over 500
1. 250 - 500
2. 150 - 249
3. 100 - 149
4. 70 - 99
5. 50 - 69
6. 30 - 49
7. 15 - 29
8. 10 - 14
9. Under 10

Source: Russett et al. Table 41

**Variable 5:** Population Growth Rate (1958-1961)

0. Over 10%
1. 4 - 10%
2. 3.5 - 3.9%
3. 3.0 - 3.4%
4. 2.5 - 2.9%
5. 2.0 - 2.4%
6. 1.5 - 1.9%
7. 1.0 - 1.4%
8. .5 - .9%
9. Under .5%

Source: Russett et al. Table 8

**Variable 6:** Urbanization (% population in cities over 20 thousand)

0. Over 75%
1. 60 - 74%
2. 45 - 59%
3. 35 - 44%
4. 32 - 35%
5. 25 - 31%
6. 15 - 24%
7. 10 - 14%
8. 5 - 9.9%
9. Under 5%

Source: Russett et al. Table 9

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*The data deck listed in Appendix A was adapted from data organized by the Societal Archives System Project, Department of Anthropology, University of Minnesota.

Based on the information in the first two tables, as well as on your reading, list several hypotheses that relate the degree of military influence on domestic politics with public policy consequences.____________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

**Variable 7:** Agricultural Population (% labor force employed in agriculture)

0. Over 90%
1. 80 - 89%
2. 70 - 79%
3. 60 - 69%
4. 50 - 59%
5. 40 - 49%
6. 30 - 39%
7. 20 - 29%
8. 10 - 19%
9. Under 10%

Source: Russett et al. Table 50

**Variable 8:** Gross National Product, 1957

0. Over 250 billion
1. 50 - 250 billion
2. 25 - 49 billion
3. 10 - 24 billion
4. 5 - 9.9 billion
5. 2.5 - 4.9 billion
6. 1 - 2.4 billion
7. 500 - 999 million
8. 250 - 499 million
9. Under 250 million

Source: Russett et al. Table 43

**Variable 9:** Gross National Product per capita, 1957

0. Over $2,000
1. $1000 - 2000
2. $500 - 999
3. $400 - 499
4. $300 - 399
5. $200 - 299
6. $100 - 199
7. $75 - 99
8. $50 - 74
9. Under $50

Source: Russett et al. Table 44

**Variable 10:** United Nations Financial Status

1. Very High (10% or above of total)
3. High (1.5 - 9.9%)
5. Medium (.25 - 1.5%)
7. Low (.05 - .24%)
9. Very Low (.04%)

**Variable 11:** Economic Development

2. Developed
3. Ambiguous
5. Intermediate
7. Underdeveloped
9. Very Underdeveloped

**Variable 12:** Literacy Rate

0. Over 90%
1. 80 - 89%
2. 70 - 79%
3. 60 - 69%
4. 50 - 59%
5. 40 - 49%
6. 30 - 39%
7. 20 - 29%
8. 10 - 19%
9. Under 10%

Source: Russett et al. Table 64

**Variable 13:** Freedom of the Press

1. Complete
4. Intermittent
5. Unascertained
6. Unascertainable
7. Internally absent
9. Internally _and_ externally absent

**Variable 14:** Newspaper Circulation (per 1000 population)

0. Over 400
1. 300 - 399
2. 200 - 299
3. 100 - 199
4. 75 - 99
5. 50 - 74
6. 25 - 49
7. 10 - 24
8. 1 - 9
9. Under 1

Source: Russett et al. Table 31

**Variable 15:** Religion (% population Christian)

0. Over 99%
1. 90 - 99%
2. 80 - 89%
3. 65 - 79%
4. 50 - 64%
5. 35 - 49%
6. 20 - 34%
7. 10 - 19%
8. 1 - 9%
9. Under 1%

Source: Russett et al. Table 74
Worldmark Encyclopedia

**Variable 16:** Religious Homogeneity (% in predominant religion)

1. Over 99%
2. 95 - 99%
3. 90 - 94%
4. 80 - 89%
5. 65 - 79%
6. 50 - 64%
7. 40 - 49%
8. 25 - 39%
9. Under 25%

Sources: Russett et al. Tables 73, 74, 75
1964 Information Please Almanac
Worldmark Encyclopedia

**Variable 17:** Racial Homogeneity (% of predominant racial background)

3. Homogeneous (over 90%)
4. Ambiguous
5. Unascertained
7. Heterogeneous (under 90%)

**Variable 18:** Linguistic Homogeneity (% of population speaking predominant language)

1. Over 99%
2. 90 - 99%
3. 80 - 89%
4. 70 - 79%
5. 60 - 69%
6. 50 - 59%
7. 40 - 49%
8. 30 - 39%
9. Under 30%

Source: Russett et al. Table 39

**Variable 19:** Date of Independence

1. Before 19th Century
3. 1800 - 1913
7. 1914 - 1945
9. After 1945

**Variable 20:** Westernization

1. Historically Western nation
3. Significantly Westernized (no colony)
4. Significantly Westernized (colony)
6. Partially Westernized (no colony)
7. Partially Westernized (colony)
9. Non-Westernized

**Variable 21:** Former Colonial Ruler

0. Non-European
1. Belgium, Italy, United States, Portugal, Netherlands
2. Spain
3. France
4. England
9. None

**Variable 22:** Political Modernization: Historical Type

1. Early European or early European derived
3. Later European or later European derived
4. Non-European autochthonous
7. Developed tutelary
9. Underdeveloped tutelary

**Variable 23:** Political Modernization: Periodization

1. Advanced
3. Mid-transitional
7. Early Transitional
9. Pre-transitional

**Variable 24:** Ideological Orientation of the Government

1. Doctrinal
3. Developmental
4. Ambiguous (but tending towards 1 or 3)
5. Situational
6. Ambiguous (but tending towards 7 or 9)
7. Conventional
9. Traditional

**Variable 25:** System Style or (Mobilization of Resources)

1. Mobilized
3. Partially Mobilized
4. Ambiguous
6. Unascertainable
9. Non-mobilized

**Variable 26:** Constitutional Status of Present Regime

1. Constitutional
4. Ambiguous
5. Unascertained
6. Unascertainable
7. Authoritarian
9. Totalitarian

**Variable 27:** Government Stability

1. Generally stable since 1920
3. Generally stable since 1945
5. Ambiguous
6. Unascertainable
7. Moderately stable since 1945
9. Unstable since 1945

**Variable 28:** Representative Character of Current Regime

1. Polyarchic (broadly representative)
3. Limited polyarchic
4. Ambiguous
6. Unascertainable
7. Pseudo-polyarchic (ineffective representation)
9. Non-polyarchic (totally non-representative)

**Variable 29:** Competitiveness of Electoral System

1. Competitive
4. Ambiguous
5. Unascertained
6. Partially competitive
9. Non-competitive

**Variable 30:** Freedom of Group Opposition

1. Can oppose government
4. Can organize politically but not oppose
5. Unascertained
6. Tolerated only informally and outside politics
7. Ambiguous
9. None tolerated

**Variable 31:** Political Homogeneity

1. High
5. Medium
6. Unascertained
9. Low

**Variable 32:** Sectionalism

1. Extreme
3. Ambiguous
4. Moderate
5. Unascertained
9. Negligible

**Variable 33:** Interest Articulation by Associational Groups (trade unions, pressure groups)

2. Significant
3. Ambiguous
5. Moderate
7. Limited
9. Negligible

**Variable 34:** Interest Articulation by Institutional Groups (e.g., legislative blocs, military officers, bureaucratic departments)

1. Very significant
3. Significant
5. Moderate
6. Unascertained
7. Limited

**Variable 35:** Interest Articulation by Non-Associational (Ascriptive) Groups (e.g., kinship, ethnic, religious groups)

2. Significant
5. Moderate
7. Limited
9. Negligible

**Variable 36:** Interest Articulation by Atomic Groups (viz in form of riots and demonstrations)

1. Frequent
2. Ambiguous
3. Occasional
5. Unascertainable
7. Infrequent
8. Unascertained
9. Very infrequent

Source: Tanter Table 22 for some countries with missing data

**Variable 37:** Interest Articulation by Political Parties

1. Significant
4. Moderate
5. Ambiguous
6. Unascertained
7. Limited
8. Negligible
9. None

**Variable 38:** Interest Aggregation by Political Parties

1. Significant
3. Moderate
4. Ambiguous
5. Unascertained
6. Unascertainable
7. Limited
8. Negligible
9. None

**Variable 39:** Interest Aggregation by Executive

1. Significant
3. Moderate
5. Unascertainable
6. Unascertained
7. Limited
8. Ambiguous
9. Negligible

**Variable 40:** Interest Aggregation by Legislature

1. Significant
3. Moderate
4. Ambiguous
5. Unascertained
6. Limited
7. Negligible
9. None

**Variable 41:** Quantitative Party System

1. No parties
2. Only one party
3. One party dominant
4. Ambiguous
5. Unascertained
6. One party somewhat dominant
7. Two-party
9. Multi-party

**Variable 42:** Qualitative Party System

0. Communist
1. Mass-based territorial & African transitional
2. Regional or regional-ethnic
3. Communal and Ambiguous
4. Corporative & Irrelevant
5. Broadly Aggregative
6. Class-oriented & Latin Liberal-Conservative
7. Personalistic
8. Unascertained
9. Latin Social Revolutionary

**Variable 43:** Stability of Party System

1. All significant parties stable
2. No parties
3. Ambiguous
4. Moderately stable
5. Unascertained
9. All parties unstable or situational

**Variable 44:** Personalismo (tendency of political parties to cluster around personality factors)

1. Pronounced
3. Irrelevant Omitted
4. Moderate
5. Unascertainable
6. Unascertained
9. Negligible

**Variable 45:** Political Leadership (Eliteness)

1. Elitist
4. Moderate elitist
5. Ambiguous
6. Unascertained
9. Non-elitist

**Variable 46:** Leadership Charisma

1. Pronounced
3. Moderate
4. Ambiguous
5. Unascertained
6. Unascertainable
9. Negligible

**Variable 47:** Vertical Power Distribution (Federalism or Independence of Government Agencies)

1. Effective federalism
3. Limited federalism
5. Formal federalism
9. Formal and effective unitarism

**Variable 48:** Horizontal Power Distribution

1. Significant (Three branches of government effectively autonomous)
2. Unascertained
6. Limited
9. Negligible (Complete dominance of one branch)

**Variable 49:** Legislative-Executive Structure

0. Parliamentary
1. Parliamentary-Republican
2. Communist
3. Parliamentary-Royalist
4. Presidential-Parliamentary
5. Monarchical-Parliamentary
6. Unascertained
7. Presidential-Premieral (Communist)
8. Presidential
9. Monarchical

**Variable 50:** Current Status of Legislature

1. Fully Effective
4. Partially Effective
5. Unascertained
7. Largely Ineffective
9. Wholly Ineffective

**Variable 51:** Type of Legislature

1. Unicameral
5. Unascertained
9. Bicameral

**Variable 52:** Current Status of Executive

1. Dominant
3. Unascertainable
4. Unascertained
5. Strong
6. Ambiguous
9. Weak

**Variable 53:** Character of Bureaucracy

1. Modern (or functional, rational)
3. Semi-modern
5. Ambiguous
6. Post-colonial transitional
7. Unascertained
9. Traditional

**Variable 54:** Political Participation of the Military

1. Interventive
4. Ambiguous
5. Supportive
9. Neutral

**Variable 55:** Political Role of the Police

1. Significant
3. Unascertained
5. Unascertainable
9. Not significant

**Variable 56:** Type of Legal System

0. Civil Law
1. Scandinavian
2. Mixed Civil-indigenous
3. Mixtures of civil, common & indigenous
4. Common law
5. Communist
6. Mixed civil-Muslin-indigenous
7. Mixed Civil-Muslim
8. Mixtures of Muslim, common, indigenous
9. Other

**Variable 57:** Communist Bloc (% vote for Communist party)

1. Over 90%
6. 20 - 29% or some ties with Communist governments
7. 10 - 19% or slight ties with Communist governments
9. Less than 10%

**Variable 58:** Military Expenditure (sum of following two variables)

| | Military Personnel as % of Population 15-64 | | Expenditure on Defense as % of GNP |
|---|---|---|---|
| 0. | Over 5% | 0. | Over 10% |
| 1. | 3.5% | 1. | 5 - 10% |
| 2. | 2.3% | 2. | 3 - 5% |
| 3. | 1.2% | 3. | 1 - 3% |
| 4. | 0.5 - .99% | 4. | Under 1% |
| 5. | Under .5% | | |

Sources: Russett et al. Tables 22 & 23
Worldmark Encyclopedia

**Variable 59:** Technological Development (Factor based on several indices of technical & economic development)

0. Less than 45
1. 45 - 59
2. 60 - 69
3. 70 - 79
4. 80 - 89
5. 90 - 99
6. 100 - 109
7. 110 - 119
8. 120 - 129
9. Over 129

Source: Berry (in Ginsburg) Table VIII-1; Figure 1

**Variable 60:** Youthfulness of population (% of population 5-14, 1955)

0. Under 10%
1. 10 - 14%
2. 15 - 19%
3. 20 - 24%
4. 25 - 29%
5. 30 - 34%
6. Over 35%

Source: Ginsburg, Table 7 and accompanying figure

**Variable 61:** Food Consumption, 1956

0. Over 3500 calories / day / capita
1. 3200 - 3500
2. 2900 - 3199
3. 2600 - 2899
4. 2300 - 2599
5. 2000 - 2299
6. 1700 - 1999
7. 1400 - 1699

Source: Ginsburg Table 9 & accompanying figure

**Variable 62:** Primacy in Urban Population (% of that population in the four largest cities which lives in the largest city)

0. Under 30%
1. 30 - 39%
2. 40 - 49%
3. 50 - 59%
4. 60 - 69%
5. 70 - 79%
6. 80 - 89%
7. 90 - 99%

Sources: Ginsburg Table 12 & accompanying figure
Worldmark Encyclopedia
Encyclopedia Britannica

**Variable 63:** Energy Potential per Capita, 1955

0. Over 60 million kilowatt - hours per capita
1. 40 - 59
2. 20 - 39
3. 10 - 19
4. 5 - 9
5. 2 - 4
6. 1 - 1.9
7. 0.5 - .99
8. 0.1 - .49
9. Under .1

Source: Ginsburg Table 23 & accompanying figure

Variable 64: Intensity of Railroad Use, 1954

0. Over 3.0 million freight ton-kilometers per railroad kilometer
1. 2.0 - 2.9
2. 1.50 - 1.99
3. 1.00 - 1.49
4. .75 - .99
5. .50 - .74
6. .25 - .49
7. .10 - .24
8. .01 - .09
9. 0.0

Source: Ginsburg Table 27 & accompanying figure

Variable 65: Energy Consumption/Capita, 1962

0. Over 7500
1. 5000 - 7499
2. 2500 - 4999
3. 1250 - 2499
4. 750 - 1249
5. 500 - 749
6. 300 - 499
7. 200 - 299
8. 100 - 199
9. Under 100

Source: UN Statistical Yearbook

Variable 66: International Trade Turnover (Exports + Imports) / Capita, 1955

0. Over $99
1. $80 - 99
2. $60 - 79
3. $40 - 59
4. $30 - 39
5. $20 - 29
6. $10 - 19
7. $5 - 9
8. $2 - 4
9. Under $2

Source: Ginsburg Table 46 & accompanying figure

Variable 67: Trade Dependency on Raw Materials (viz as % of exports) 1955

0. Over 99%
1. 95 - 99%
2. 90 - 94%
3. 85 - 89%
4. 80 - 84%
5. 70 - 79%
6. 50 - 69%
7. 30 - 49%
8. 15 - 29%
9. Less than 15%

Source: Ginsburg Table 47 & accompanying figure

Variable 68: Trade with North Atlantic Countries-North America & West Europe, 1955-6 (as % of Total Trade)

0. Over 99%
1. 90 - 99%
2. 80 - 89%
3. 70 - 79%
4. 60 - 69%
5. 50 - 59%
6. 40 - 49%
7. 30 - 39%
8. 15 - 29%
9. Under 15%

Source: Ginsburg Table 48

Variable 69: Working Age Population (as % of total population)

0. Over 67%
1. 65 - 66%
2. 63 - 64%
3. 61 - 62%
4. 59 - 69%
5. 57 - 58%
6. 55 - 56%
7. 53 - 54%
8. 51 - 52%
9. 49 - 50%

Source: Russett et al. Table

**Variable 70:** Votes in National Elections (as % of voting age population) various years since 1955

0. Over 99%
1. 90 - 99%
2. 80 - 89%
3. 70 - 79%
4. 60 - 69%
5. 50 - 59%
6. 40 - 49%
7. 30 - 39%
8. 20 - 29%
9. Under 20%

Source: Russett et al. Table 24<br>
Worldmark Encyclopedia

**Variable 71:** Annual Growth Rate of Energy Consumption per Capita, 1959-62

0. Over 8%
1. 7.0 - 7.9%
2. 6.0 - 6.9%
3. 5.0 - 5.9%
4. 4.0 - 4.9%
5. 3.0 - 3.9%
6. 2.0 - 2.9%
7. 1.0 - 1.9%
8. 0.0 - 0.9%
9. Negative

Source: UN Statistical Yearbook

**Variable 72:** Deaths from Domestic Group Violence, 1950-61 (per one-million population)

0. Over 1000
1. 500 - 599
2. 100 - 499
3. 50 - 99
4. 10 - 49
5. 5 - 9
6. 1 - 4
7. 0.5 - .99
8. .01 - .49
9. None

Sources:
Russett et al. Table 29
Tanter Table 22
Worldmark Encyclopedia
Yearbook of Encyclopedia Britannica

**Variable 73:** Population per (1000 Hectares of) Agricultural Land

0. Over 15,000
1. 7500 - 15,000
2. 5000 - 7499
3. 2000 - 4999
4. 1000 - 1999
5. 750 - 999
6. 500 - 749
7. 250 - 499
8. 100 - 249
9. Under 100

Source: Russett et al. Table 42

**Variable 74:** Students Enrolled in Higher Education (per 100,000 population)

0. Over 1500
1. 1000 - 1499
2. 750 - 999
3. 500 - 749
4. 300 - 499
5. 100 - 299
6. 75 - 99
7. 50 - 74
8. 15 - 49
9. Under 25

Sources:
Russett et al. Table 62
Worldmark Encyclopedia

**Variable 75:** Catholics (as % of population)

0. Over 99%
1. 95 - 99%
2. 90 - 94%
3. 80 - 89%
4. 60 - 79%
5. 40 - 59%
6. 20 - 29%
7. 10 - 19%
8. 5 - 9%
9. Under 5%

Sources:
Russett et al. Table 73
Worldmark Encyclopedia

Variable 76: Moslems (as % of population)

0. Over 99%
1. 90 - 99%
2. 80 - 89%
3. 60 - 79%
4. 40 - 59%
5. 20 - 39%
6. 10 - 19%
7. 5 - 9%
8. 1 - 4%
9. Under 1%

Source: Russett et al. Table 75

Variable 77: Annual Growth Rate of GNP per Capita, circa 1948-63

1. Over 7%
2. 6 - 6.9%
3. 5 - 5.9%
4. 4 - 4.9%
5. 3 - 3.9%
6. 2 - 2.9%
7. 1 - 1.9%
8. 0.0 - 0.9%
9. Negative

Sources: Russett et al. Table 45
Worldmark Encyclopedia
Yearbook of Encyclopedia Britannica

Variable 78: Ratio of Exports to Imports, 1961

0. Under .70
1. .70 - .79
2. .80 - .89
3. .90 - .94
4. .95 - .99
5. 1.00 - 1.05
6. 1.06 - 1.10
7. 1.11 - 1.19
8. 1.20 - 1.29
9. Over 1.30

Sources: UN Statistical Yearbook
Worldmark Encyclopedia

Variable 79: Foreign Trade (as % of GNP Imports + Exports)

0. Over 100%
1. 80 - 99%
2. 70 - 79%
3. 60 - 69%
4. 50 - 59%
5. 40 - 49%
6. 30 - 39%
7. 20 - 29%
8. 10 - 19%
9. Under 10%

Sources: Russett et al. Table 46
Worldmark Encyclopedia

Variable 80: Executive Stability, 1945-61 (Number of Years Independent/Number of Chief Executives)

1. 17
2. 10 - 16
3. 8 - 9
4. 5 - 7
5. 4 - 4.9
6. 3 - 3.9
7. 2 - 2.9
8. 1 - 1.9
9. Under 1

Sources: Russett et al. Table 30
Worldmark Encyclopedia
Yearbook of Encyclopedia Britannica

Variable 81: Climate (Temperate vs. Tropical. Compiled as an overall weighted index from Life Pictorial Atlas of the World with the following codes used.)

1. Humid Continental
2. Marine
3. Mountainous
4. Subtropical Dry Summer
5. Humid Subtropical
6. Semi-arid
7. Tropical Wet and Dry
8. Desert
9. Tropical Wet

Source: Life Pictorial Atlas, p. 26-7

Variable 82: Government Costs (as % of GNP) - average of revenues and expenditures

0. Over 50%
1. 40 - 49%
2. 30 - 39%
3. 25 - 29%
4. 20 - 24%
5. 15 - 19%
6. 10 - 14%
7. 5 - 9%
8. 0 - 4%

Sources: Worldmark Encyclopedia
Russett et al. Tables 17 & 18

Variable 83: Political Development, 1940-60*

2. Very Low
3. Low
4. Low Medium
5. Medium (low)
6. Medium (high)
7. High medium
8. High
9. Very high

Source: Cutright, Figure 1

*Reflects years for which country was ruled by an elected executive & a legislature composed of heterogeneous members. For exact definitions, see the Cutright article. The code represents the T-score of political development. Scores of 2 & 3 were given to ex-colonial African countries.

Variable 84: Communications Development (T-score based on newspaper, mail & telephone operations)

2. Very low
3. Low
4. Low medium
5. Medium
6. High medium
7. High
8. Very high

Source: Cutright, Figure 1

Variable 85: United Nations Voting Bloc

0. Communist Bloc
1. Communist Bloc (non-member)
2. Strong Neutralist Bloc
3. Weak Neutralist Bloc
4. Non-aligned (non-member)
5. Weak New African Bloc
6. Strong New African Bloc
7. Western Bloc (non-member)
8. Weak Western Bloc
9. Strong Western Bloc

Source: Wrigley Table 6

## Appendix A

## Part II

## The Coded Printout

Part II of Appendix A consists simply of the recorded values for a country list rated in terms of each variable listed in the Code Sheet, part I, of Appendix A. The countries are listed in alphabetical order and the variables are ordered from 1 to 85 beginning in column 5.

| | | | | | Variable | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Card 1 Row | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Afghanistan | 0 | 0 | 1 | | 5 | 3 | 5 | 7 | 3 | 8 | 1 | 7 | 8 | 7 | 9 | 9 | 9 | 8 | 9 | 2 |
| Albania | 0 | 0 | 2 | | 4 | 9 | 9 | 5 | 3 | 8 | 2 | 8 | 6 | 9 | 9 | 3 | 9 | 6 | 5 | 5 |
| Algeria | 0 | 0 | 3 | | 5 | 2 | 5 | 9 | 6 | 7 | 2 | 6 | 6 | 6 | 9 | 8 | 7 | 7 | 8 | 3 |
| Argentina | 0 | 0 | 4 | | 2 | 2 | 4 | 9 | 6 | 2 | 7 | 4 | 3 | 5 | 5 | 1 | 4 | 3 | 1 | 4 |
| Australia | 0 | 0 | 5 | | 9 | 1 | 5 | 9 | 5 | 2 | 8 | 3 | 1 | 3 | 2 | 0 | 1 | 1 | 3 | 8 |
| Austria | 0 | 0 | 6 | | 3 | 8 | 6 | 4 | 9 | 3 | 6 | 5 | 2 | 5 | 5 | 0 | 1 | 2 | 1 | 4 |
| Belgium | 0 | 0 | 7 | | 3 | 9 | 6 | 1 | 8 | 4 | 8 | 3 | 1 | 5 | 2 | 0 | 1 | 2 | 1 | 2 |
| Bolivia | 0 | 0 | 8 | | 2 | 3 | 7 | 9 | 7 | 6 | 2 | 8 | 7 | 9 | 9 | 6 | 4 | 6 | 1 | 3 |
| Brazil | 0 | 0 | 9 | | 2 | 1 | 2 | 9 | 2 | 5 | 3 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 1 | 3 |
| Bulgaria | 0 | 1 | 0 | | 4 | 8 | 5 | 4 | 8 | 6 | 3 | 5 | 4 | 7 | 5 | 1 | 9 | 2 | 3 | 4 |
| Burma | 0 | 1 | 1 | | 9 | 3 | 4 | 6 | 5 | 7 | 2 | 6 | 8 | 7 | 7 | 5 | 4 | 7 | 8 | 3 |
| Burundi | 0 | 1 | 2 | | 6 | 9 | 8 | 4 | 7 | 8 | 1 | 8 | 9 | 9 | 9 | 8 | 5 | 8 | 4 | 7 |
| Cambodia | 0 | 1 | 3 | | 9 | 6 | 7 | 6 | 2 | 6 | 1 | 8 | 6 | 9 | 9 | 8 | 7 | 8 | 9 | 2 |
| Cameroun | 0 | 1 | 4 | | 6 | 4 | 7 | 9 | 7 | 9 | 1 | 8 | 9 | 9 | 9 | 9 | 1 | 8 | 6 | 7 |
| Canada | 0 | 1 | 5 | | 0 | 1 | 5 | 9 | 5 | 3 | 8 | 2 | 0 | 3 | 1 | 0 | 1 | 2 | 2 | 7 |
| Central Afr. Rep. | 0 | 1 | 6 | | 6 | 4 | 9 | 9 | 6 | 9 | 1 | 8 | 6 | 9 | 9 | 8 | 5 | 9 | 6 | 5 |
| Ceylon | 0 | 1 | 7 | | 8 | 9 | 5 | 2 | 4 | 7 | 4 | 6 | 6 | 7 | 9 | 3 | 6 | 6 | 8 | 6 |
| Chad | 0 | 1 | 8 | | 6 | 2 | 8 | 9 | 7 | 9 | 1 | 8 | 6 | 9 | 9 | 8 | 1 | 9 | 8 | 6 |
| Chile | 0 | 1 | 9 | | 2 | 3 | 6 | 8 | 5 | 2 | 6 | 5 | 4 | 5 | 7 | 1 | 1 | 3 | 1 | 3 |
| China | 0 | 2 | 0 | | 7 | 1 | 1 | 4 | 5 | 7 | 3 | 2 | 8 | 4 | 7 | 5 | 9 | 7 | 9 | 8 |
| Colombia | 0 | 2 | 1 | | 2 | 3 | 5 | 8 | 5 | 6 | 4 | 5 | 5 | 5 | 5 | 3 | 1 | 5 | 1 | 2 |
| Congo (Bra) | 0 | 2 | 2 | | 6 | 5 | 9 | 9 | 3 | 6 | 1 | 8 | 8 | 9 | 9 | 8 | 5 | 8 | 5 | 5 |
| Congo (Leo) | 0 | 2 | 3 | | 6 | 2 | 5 | 9 | 5 | 8 | 1 | 6 | 7 | 7 | 9 | 6 | 4 | 8 | 5 | 8 |
| Costa Rica | 0 | 2 | 4 | | 1 | 9 | 9 | 7 | 1 | 6 | 4 | 8 | 4 | 9 | 4 | 2 | 1 | 4 | 1 | 2 |
| Cuba | 0 | 2 | 5 | | 1 | 8 | 5 | 5 | 5 | 3 | 5 | 5 | 3 | 7 | 7 | 2 | 9 | 3 | 2 | 4 |
| Cyprus | 0 | 2 | 6 | | 5 | 9 | 9 | 5 | 7 | 7 | 4 | 8 | 3 | 9 | 5 | 3 | 1 | 3 | 2 | 5 |
| Czechoslovakia | 0 | 2 | 7 | | 4 | 7 | 5 | 3 | 8 | 5 | 6 | 4 | 2 | 5 | 2 | 0 | 9 | 2 | 2 | 6 |
| Dahomey | 0 | 2 | 8 | | 6 | 7 | 8 | 7 | 7 | 8 | 1 | 8 | 6 | 9 | 9 | 8 | 5 | 8 | 8 | 6 |
| Denmark | 0 | 2 | 9 | | 3 | 9 | 7 | 3 | 8 | 2 | 7 | 5 | 1 | 5 | 2 | 0 | 1 | 1 | 1 | 2 |
| Dominican Rep. | 0 | 3 | 0 | | 1 | 9 | 8 | 5 | 2 | 7 | 4 | 7 | 5 | 7 | 9 | 4 | 1 | 6 | 0 | 2 |
| Ecuador | 0 | 3 | 1 | | 2 | 5 | 7 | 7 | 3 | 6 | 4 | 7 | 6 | 7 | 7 | 4 | 1 | 5 | 1 | 3 |
| El Salvador | 0 | 3 | 2 | | 1 | 9 | 8 | 3 | 2 | 7 | 3 | 7 | 5 | 9 | 9 | 6 | 5 | 6 | 1 | 2 |
| Ethiopia | 0 | 3 | 3 | | 6 | 3 | 4 | 7 | 5 | 9 | 1 | 6 | 8 | 7 | 9 | 9 | 7 | 8 | 5 | 7 |
| Finland | 0 | 3 | 4 | | 3 | 5 | 7 | 8 | 8 | 5 | 5 | 5 | 2 | 5 | 2 | 0 | 1 | 1 | 1 | 2 |
| France | 0 | 3 | 5 | | 3 | 4 | 3 | 4 | 7 | 5 | 7 | 2 | 2 | 3 | 2 | 0 | 4 | 2 | 1 | 4 |
| Gabon | 0 | 3 | 6 | | 6 | 5 | 9 | 9 | 7 | 8 | 1 | 8 | 6 | 9 | 9 | 8 | 5 | 8 | 4 | 6 |
| Germany, E | 0 | 3 | 7 | | 4 | 8 | 5 | 3 | 9 | 3 | 8 | 4 | 2 | 5 | 2 | 0 | 9 | 0 | 1 | 5 |
| German Fr | 0 | 3 | 8 | | 3 | 6 | 3 | 2 | 7 | 2 | 8 | 2 | 2 | 3 | 2 | 0 | 1 | 1 | 1 | 7 |
| Ghana | 0 | 3 | 9 | | 6 | 6 | 6 | 7 | 1 | 8 | 2 | 7 | 6 | 7 | 9 | 7 | 7 | 6 | 6 | 7 |
| Greece | 0 | 4 | 0 | | 3 | 7 | 6 | 5 | 8 | 3 | 5 | 5 | 4 | 7 | 5 | 1 | 5 | 3 | 1 | 2 |
| Guatemala | 0 | 4 | 1 | | 1 | 8 | 7 | 6 | 3 | 7 | 3 | 7 | 6 | 7 | 9 | 7 | 5 | 7 | 0 | 3 |
| Guinea | 0 | 4 | 2 | | 6 | 6 | 8 | 8 | 3 | 8 | 1 | 8 | 7 | 9 | 9 | 8 | 7 | 9 | 8 | 5 |
| Haiti | 0 | 4 | 3 | | 1 | 9 | 7 | 2 | 5 | 8 | 1 | 8 | 6 | 9 | 9 | 8 | 7 | 7 | 3 | 5 |
| Hondoras | 0 | 4 | 4 | | 1 | 8 | 9 | 7 | 3 | 7 | 3 | 8 | 6 | 9 | 9 | 5 | 5 | 6 | 0 | 2 |
| Hungary | 0 | 4 | 5 | | 4 | 8 | 5 | 3 | 8 | 3 | 6 | 5 | 3 | 5 | 5 | 0 | 9 | 3 | 1 | 6 |

| Variable | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Afghanistan | 8 | 6 | 1 | 6 | 9 | 4 | 3 | 9 | 9 | 7 | 1 | 7 | 3 | 6 | 5 |
| Albania | 3 | 2 | 3 | 6 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Algeria | 3 | 4 | 9 | 4 | 3 | 7 | 1 | 3 | 1 | 7 | 6 | 7 | 9 | 5 | 5 |
| Argentina | 3 | 2 | 3 | 4 | 2 | 3 | 1 | 4 | 9 | 6 | 9 | 4 | 1 | 1 | 9 |
| Australia | 3 | 2 | 3 | 1 | 4 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Austria | 3 | 2 | 1 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 1 |
| Belgium | 3 | 5 | 3 | 1 | 9 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 9 |
| Bolivia | 3 | 8 | 3 | 4 | 2 | 3 | 3 | 3 | 3 | 1 | 6 | 1 | 1 | 1 | 9 |
| Brazil | 8 | 2 | 3 | 4 | 1 | 3 | 1 | 4 | 9 | 1 | 9 | 3 | 1 | 1 | 3 |
| Bulgaria | 8 | 3 | 3 | 3 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Burma | 3 | 6 | 9 | 7 | 4 | 7 | 3 | 6 | 1 | 7 | 9 | 9 | 5 | 5 | 5 |
| Burundi | 3 | 2 | 9 | 7 | 1 | 9 | 3 | 3 | 9 | 6 | 7 | 6 | 6 | 4 | 6 |
| Cambodia | 3 | 3 | 9 | 7 | 3 | 7 | 3 | 6 | 3 | 7 | 6 | 7 | 9 | 6 | 5 |
| Cameroun | 3 | 6 | 9 | 7 | 3 | 9 | 3 | 3 | 9 | 5 | 5 | 4 | 5 | 4 | 5 |
| Canada | 3 | 4 | 3 | 1 | 4 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 5 |
| Central Afr. Rep. | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 7 | 6 | 7 | 9 | 6 | 9 |
| Ceylon | 3 | 4 | 9 | 4 | 4 | 7 | 7 | 4 | 9 | 1 | 9 | 1 | 1 | 1 | 5 |
| Chad | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 5 | 6 | 7 | 6 | 4 | 9 |
| Chile | 4 | 2 | 3 | 4 | 2 | 3 | 1 | 7 | 9 | 1 | 6 | 3 | 1 | 1 | 9 |
| China | 3 | 3 | 1 | 3 | 9 | 4 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Colombia | 8 | 2 | 3 | 4 | 2 | 3 | 3 | 7 | 9 | 1 | 6 | 3 | 4 | 1 | 5 |
| Congo (Bra) | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 5 | 7 | 7 | 6 | 4 | 9 |
| Congo (Leo) | 3 | 9 | 9 | 7 | 1 | 9 | 7 | 3 | 9 | 6 | 9 | 6 | 5 | 6 | 9 |
| Costa Rica | 3 | 2 | 3 | 4 | 2 | 3 | 1 | 7 | 9 | 1 | 6 | 1 | 1 | 1 | 1 |
| Cuba | 8 | 2 | 3 | 4 | 2 | 3 | 1 | 2 | 1 | 9 | 4 | 7 | 5 | 9 | 6 |
| Cyprus | 3 | 4 | 9 | 4 | 4 | 7 | 1 | 7 | 9 | 1 | 7 | 1 | 4 | 1 | 9 |
| Czechoslovakia | 3 | 6 | 7 | 1 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 4 |
| Dahomey | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 5 | 7 | 7 | 9 | 6 | 9 |
| Denmark | 3 | 2 | 1 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dominican Rep. | 8 | 2 | 3 | 4 | 2 | 3 | 3 | 3 | 9 | 1 | 5 | 1 | 1 | 1 | 5 |
| Ecuador | 8 | 2 | 3 | 4 | 2 | 3 | 3 | 7 | 9 | 1 | 9 | 3 | 1 | 1 | 9 |
| El Salvador | 8 | 2 | 3 | 4 | 2 | 3 | 3 | 5 | 9 | 7 | 9 | 7 | 9 | 4 | 9 |
| Ethiopia | 8 | 5 | 1 | 6 | 9 | 4 | 3 | 9 | 9 | 7 | 6 | 7 | 4 | 6 | 9 |
| Finland | 3 | 2 | 7 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 5 |
| France | 3 | 2 | 1 | 1 | 9 | 1 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 5 |
| Gabon | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 5 | 6 | 7 | 9 | 4 | 9 |
| Germany, E | 3 | 1 | 3 | 1 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| German Fr | 3 | 1 | 3 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 5 |
| Ghana | 3 | 5 | 9 | 7 | 4 | 9 | 7 | 3 | 1 | 7 | 3 | 7 | 9 | 6 | 5 |
| Greece | 3 | 2 | 3 | 1 | 9 | 3 | 2 | 7 | 9 | 1 | 6 | 1 | 1 | 1 | 5 |
| Guatemala | 8 | 6 | 3 | 4 | 2 | 3 | 1 | 4 | 9 | 6 | 9 | 6 | 5 | 5 | 9 |
| Guinea | 3 | 8 | 9 | 7 | 3 | 9 | 7 | 3 | 1 | 7 | 3 | 7 | 9 | 6 | 5 |
| Haiti | 8 | 2 | 3 | 7 | 3 | 3 | 3 | 5 | 9 | 8 | 4 | 7 | 9 | 6 | 9 |
| Hondoras | 8 | 2 | 3 | 4 | 2 | 3 | 3 | 7 | 9 | 1 | 9 | 3 | 1 | 1 | 5 |
| Hungary | 3 | 2 | 7 | 1 | 9 | 3 | 1 | 1 | 1 | 9 | 4 | 7 | 9 | 6 | 6 |

| Variable | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| Afghanistan | 4 | 9 | 1 | 2 | 3 | 9 | 9 | 9 | 7 | 1 | 4 | 2 | 3 | 1 | 4 |
| Albania | 4 | 9 | 1 | 5 | 8 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| Algeria | 4 | 7 | 1 | 5 | 5 | 6 | 6 | 5 | 6 | 2 | 1 | 5 | 9 | 6 | 3 |
| Argentina | 3 | 2 | 1 | 7 | 2 | 4 | 4 | 7 | 5 | 9 | 6 | 9 | 4 | 9 | 9 |
| Australia | 4 | 2 | 7 | 9 | 9 | 4 | 1 | [illegible] | 3 | 7 | 6 | 1 | 9 | 9 | 9 |
| Austria | 9 | 5 | 5 | 9 | 9 | 4 | 1 | 3 | 3 | 7 | 6 | 1 | 9 | 9 | 9 |
| Belgium | 1 | 2 | 5 | 5 | 9 | 1 | 7 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Bolivia | 9 | 7 | 3 | 5 | 3 | 1 | 3 | 1 | 5 | 2 | 9 | 9 | 4 | 9 | 9 |
| Brazil | 1 | 2 | 1 | 5 | 3 | 4 | 7 | 7 | 5 | 9 | 6 | 9 | 4 | 4 | 9 |
| Bulgaria | 4 | 9 | 1 | 7 | 8 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| Burma | 1 | 7 | 1 | 2 | 3 | 6 | 6 | 5 | 6 | 5 | 8 | 5 | 5 | 6 | 6 |
| Burundi | 9 | 9 | 6 | 2 | 7 | 8 | 5 | 1 | 7 | 3 | 2 | 5 | 6 | 9 | 5 |
| Cambodia | 4 | 9 | 3 | 2 | 3 | 8 | 3 | 1 | 7 | 2 | 3 | 4 | 1 | 5 | 1 |
| Cameroun | 4 | 9 | 6 | 2 | 3 | 4 | 3 | 1 | 5 | 3 | 2 | 5 | 4 | 9 | 3 |
| Canada | 1 | 2 | 5 | 5 | 9 | 8 | 1 | 3 | 3 | 7 | 5 | 1 | 9 | 9 | 9 |
| Central Afr. Rep. | 9 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 2 | 5 | 4 | 9 | 3 |
| Ceylon | 4 | 7 | 3 | 2 | 1 | 1 | 7 | 9 | 7 | 9 | 3 | 9 | 4 | 4 | 9 |
| Chad | 4 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 2 | 5 | 4 | 9 | 3 |
| Chile | 9 | 5 | 5 | 7 | 7 | 1 | 7 | 7 | 3 | 9 | 6 | 9 | 4 | 4 | 9 |
| China | 4 | 9 | 1 | 2 | 1 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 1 |
| Colombia | 1 | 7 | 3 | 7 | 3 | 4 | 4 | 3 | 6 | 7 | 6 | 3 | 4 | 4 | 9 |
| Congo (Bra) | 4 | 9 | 6 | 2 | 3 | 8 | 7 | 1 | 7 | 3 | 2 | 5 | 4 | 9 | 3 |
| Congo (Leo) | 1 | 9 | 3 | 2 | 1 | 1 | 6 | 5 | 7 | 9 | 2 | 9 | 4 | 9 | 4 |
| Costa Rica | 9 | 7 | 5 | 7 | 7 | 7 | 7 | 3 | 5 | 9 | 9 | 4 | 4 | 9 | 9 |
| Cuba | 9 | 9 | 1 | 7 | 5 | 6 | 6 | 6 | 6 | 2 | 8 | 5 | 9 | 5 | 1 |
| Cyprus | 9 | 7 | 1 | 2 | 2 | 5 | 4 | 8 | 6 | 9 | 3 | 5 | 6 | 5 | 4 |
| Czechoslovakia | 1 | 9 | 1 | 7 | 7 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| Dahomey | 4 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 2 | 5 | 4 | 9 | 3 |
| Denmark | 9 | 2 | 7 | 9 | 9 | 1 | 7 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Dominican Rep. | 9 | 7 | 3 | 7 | 5 | 7 | 7 | 3 | 6 | 9 | 9 | 5 | 5 | 9 | 9 |
| Ecuador | 1 | 7 | 3 | 5 | 3 | 4 | 7 | 7 | 5 | 9 | 6 | 9 | 1 | 1 | 9 |
| El Salvador | 9 | 7 | 3 | 5 | 3 | 4 | 8 | 9 | 7 | 9 | 7 | 9 | 1 | 1 | 9 |
| Ethiopia | 4 | 9 | 1 | 2 | 3 | 9 | 4 | 9 | 7 | 1 | 4 | 2 | 3 | 1 | 1 |
| Finland | 9 | 2 | 7 | 7 | 9 | 1 | 8 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| France | 4 | 2 | 5 | 7 | 2 | 4 | 4 | 1 | 5 | 3 | 3 | 4 | 4 | 9 | 1 |
| Gabon | 4 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 2 | 5 | 4 | 9 | 3 |
| Germany, E | 9 | 9 | 1 | 7 | 1 | 8 | 3 | 9 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| German Fr | 4 | 2 | 5 | 7 | 9 | 4 | 3 | 3 | 3 | 6 | 6 | 1 | 9 | 9 | 9 |
| Ghana | 4 | 9 | 1 | 1 | 3 | 8 | 5 | 1 | 7 | 2 | 1 | 4 | 4 | 4 | 1 |
| Greece | 9 | 5 | 5 | 7 | 7 | 4 | 4 | 3 | 3 | 3 | 3 | 9 | 1 | 9 | 9 |
| Guatemala | 9 | 7 | 3 | 5 | 3 | 1 | 8 | 7 | 5 | 9 | 3 | 9 | 1 | 1 | 9 |
| Guinea | 4 | 9 | 1 | 1 | 3 | 8 | 5 | 1 | 7 | 2 | 1 | 1 | 9 | 4 | 1 |
| Haiti | 9 | 9 | 3 | 1 | 3 | 9 | 9 | 9 | 7 | 1 | 4 | 2 | 3 | 5 | 9 |
| Honduras | 9 | 7 | 3 | 5 | 3 | 4 | 7 | 7 | 5 | 7 | 6 | 9 | 1 | 1 | 9 |
| Hungary | 9 | 7 | 1 | 7 | 2 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |

| | | | | | | Variable | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
| | | | | | | Row | | | | | | | | | |
| | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| Afghanistan | 9 | 9 | 5 | 9 | 9 | 1 | 9 | 5 | 1 | 8 | 9 | 7 | 9 | 3 | 5 |
| Albania | 9 | 9 | 2 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 2 | 5 | 2 | 4 |
| Algeria | 9 | 9 | 6 | 7 | 1 | 1 | 6 | 5 | 1 | 7 | 9 | 6 | 6 | 4 | 6 |
| Argentina | 3 | 7 | 8 | 4 | 9 | 3 | 3 | 1 | 1 | 0 | 8 | 7 | 2 | 2 | 1 |
| Australia | 1 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 4 | 9 | 7 | 1 | 2 | 2 |
| Austria | 3 | 1 | 1 | 1 | 9 | 4 | 1 | 9 | 9 | 0 | 7 | 8 | 1 | 2 | 2 |
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| Bolivia | 9 | 6 | 8 | 4 | 9 | 4 | 3 | 9 | 1 | 0 | 9 | 8 | 7 | 3 | 7 |
| Brazil | 1 | 1 | 8 | 4 | 9 | 4 | 3 | 1 | 5 | 0 | 8 | 7 | 4 | 4 | 4 |
| Bulgaria | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 2 | 4 | 2 | 1 |
| Burma | 5 | 7 | 6 | 5 | 1 | 3 | 6 | 1 | 1 | 9 | 9 | 6 | 8 | 3 | 6 |
| Burundi | 9 | 6 | 3 | 7 | 1 | 5 | 6 | 9 | 5 | 2 | 9 | 8 | 8 | 3 | 6 |
| Cambodia | 9 | 9 | 9 | 9 | 9 | 1 | 9 | 5 | 1 | 9 | 9 | 7 | 9 | 4 | 5 |
| Cameroun | 1 | 6 | 8 | 4 | 1 | 4 | 6 | 9 | 1 | 2 | 9 | 9 | 8 | 3 | 6 |
| Canada | 1 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 3 | 9 | 5 | 0 | 2 | 2 |
| Central Afr. Rep. | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 9 | 1 | 2 | 9 | 9 | 9 | 3 | 5 |
| Ceylon | 9 | 6 | 3 | 4 | 9 | 6 | 3 | 9 | 9 | 9 | 9 | 8 | 6 | 3 | 5 |
| Chad | 9 | 9 | 4 | 7 | 1 | 5 | 6 | 9 | 5 | 6 | 9 | 9 | 9 | 3 | 5 |
| Chile | 9 | 1 | 8 | 4 | 9 | 6 | 3 | 9 | 5 | 0 | 7 | 6 | 3 | 3 | 3 |
| China | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 6 | 6 | 3 | 5 |
| Colombia | 9 | 6 | 8 | 4 | 9 | 4 | 3 | 9 | 1 | 0 | 9 | 8 | 4 | 4 | 4 |
| Congo (Bra) | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 9 | 1 | 2 | 9 | 9 | 9 | 3 | 5 |
| Congo (Leo) | 5 | 7 | 1 | 5 | 1 | 3 | 6 | 4 | 1 | 2 | 9 | 9 | 7 | 3 | 6 |
| Costa Rica | 9 | 1 | 8 | 4 | 1 | 4 | 3 | 9 | 5 | 0 | 9 | 9 | 5 | 4 | 3 |
| Cuba | 9 | 9 | 6 | 5 | 5 | 1 | 3 | 4 | 1 | 5 | 1 | 7 | 3 | 3 | 3 |
| Cyprus | 9 | 1 | 8 | 1 | 1 | 4 | 3 | 5 | 5 | 3 | 7 | 7 | 6 | 3 | 4 |
| Czechoslovakia | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 9 | 1 | 5 | 1 | 3 | 1 | 1 | 3 |
| Dahomey | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 9 | 1 | 6 | 9 | 9 | 9 | 4 | 5 |
| Denmark | 9 | 1 | 3 | 1 | 1 | 4 | 1 | 9 | 9 | 1 | 9 | 6 | 1 | 2 | 1 |
| Dominican Rep. | 9 | 1 | 8 | 5 | 9 | 4 | 3 | 9 | 3 | 0 | 9 | 5 | 7 | 4 | 5 |
| Ecuador | 9 | 6 | 8 | 4 | 9 | 4 | 3 | 5 | 1 | 0 | 8 | 7 | 7 | 4 | 5 |
| El Salvador | 9 | 6 | 8 | 7 | 1 | 1 | 3 | 1 | 1 | 0 | 9 | 8 | 6 | 4 | 4 |
| Ethiopia | 9 | 9 | 9 | 9 | 9 | 1 | 9 | 5 | 1 | 6 | 9 | 8 | 9 | 4 | 3 |
| Finland | 9 | 1 | 1 | 1 | 1 | 4 | 1 | 9 | 9 | 1 | 6 | 6 | 2 | 2 | 2 |
| France | 9 | 6 | 4 | 4 | 9 | 1 | 1 | 4 | 9 | 0 | 6 | 2 | 0 | 2 | 2 |
| Gabon | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 9 | 1 | 2 | 9 | 8 | 9 | 3 | 5 |
| Germany, E | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 7 | 1 | 1 | 4 |
| German Fr | 1 | 1 | 1 | 1 | 9 | 4 | 1 | 9 | 9 | 0 | 9 | 6 | 0 | 1 | 2 |
| Ghana | 9 | 9 | 8 | 9 | 1 | 1 | 3 | 5 | 1 | 8 | 9 | 9 | 6 | 3 | 4 |
| Greece | 9 | 1 | 3 | 4 | 1 | 6 | 3 | 9 | 1 | 0 | 9 | 3 | 4 | 2 | 3 |
| Guatemala | 9 | 6 | 8 | 5 | 1 | 3 | 3 | 1 | 1 | 0 | 9 | 8 | 6 | 4 | 4 |
| Guinea | 9 | 9 | 8 | 9 | 1 | 1 | 3 | 5 | 1 | 3 | 6 | 8 | 7 | 3 | 5 |
| Haiti | 9 | 9 | 8 | 9 | 1 | 1 | 3 | 9 | 1 | 0 | 9 | 8 | 9 | 4 | 6 |
| Hondoras | 9 | 6 | 8 | 4 | 1 | 1 | 3 | 9 | 1 | 0 | 8 | 8 | 7 | 3 | 4 |
| Hungary | 9 | 9 | 2 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 6 | 2 | 2 | 3 |

| | Variable | | | | | | | | | | | Variable | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 |
| | Row | | | | | | | | | | | Card 2 Row | | | |
| | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 5 | 6 | 7 | 8 |
| Afghanistan | 2 | 6 | 9 | 9 | 9 | 0 | 6 | 6 | 5 | 0 | 4 | 5 | 9 | 9 | 0 |
| Albania | 3 | 7 | 4 | 6 | 8 | 6 | 9 | 7 | 1 | 3 | 7 | 4 | 5 | 8 | 3 |
| Algeria | 3 | 9 | 6 | 7 | 6 | 3 | 1 | 6 | 2 | 9 | 2 | 8 | 7 | 8 | 1 |
| Argentina | 5 | 7 | 6 | 3 | 6 | 2 | 3 | 2 | 4 | 5 | 2 | 8 | 2 | 3 | 9 |
| Australia | 2 | 2 | 6 | 2 | 3 | 3 | 4 | 3 | 2 | 6 | 9 | 9 | 2 | 7 | 9 |
| Austria | 5 | 5 | 3 | 3 | 5 | 7 | 4 | 1 | 1 | 2 | 9 | 4 | 3 | 3 | 9 |
| Belgium | 2 | 4 | 3 | 2 | 2 | 8 | 3 | 2 | 2 | 4 | 7 | 2 | 3 | 1 | 9 |
| Bolivia | 4 | 5 | 7 | 8 | 7 | 1 | 1 | 6 | 5 | 6 | 1 | 8 | 5 | 2 | 9 |
| Brazil | 2 | 6 | 7 | 6 | 8 | 1 | 2 | 6 | 7 | 3 | 6 | 7 | 5 | 2 | 9 |
| Bulgaria | 4 | 7 | 4 | 3 | 7 | 6 | 8 | 1 | 0 | 0 | 7 | 4 | 4 | 9 | 7 |
| Burma | 4 | 8 | 7 | 9 | 8 | 1 | 8 | 2 | 5 | 9 | 2 | 7 | 7 | 9 | 8 |
| Burundi | 6 | 6 | 7 | 9 | 8 | 2 | 1 | 7 | 4 | 9 | 5 | 4 | 8 | 6 | 9 |
| Cambodia | 6 | 8 | 8 | 9 | 9 | 2 | 6 | 7 | 5 | 2 | 6 | 4 | 9 | 9 | 8 |
| Cameroun | 2 | 5 | 7 | 9 | 7 | 2 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 7 | 6 |
| Canada | 2 | 1 | 3 | 1 | 2 | 6 | 2 | 4 | 3 | 5 | 9 | 7 | 3 | 5 | 9 |
| Central Afr. Rep. | 2 | 3 | 7 | 9 | 8 | 1 | 2 | 4 | 7 | 9 | 5 | 9 | 9 | 7 | 8 |
| Ceylon | 5 | 9 | 7 | 8 | 7 | 0 | 5 | 5 | 5 | 3 | 4 | 2 | 7 | 8 | 7 |
| Chad | 2 | 3 | 7 | 9 | 8 | 1 | 2 | 6 | 5 | 6 | 4 | 8 | 9 | 9 | 4 |
| Chile | 5 | 6 | 6 | 4 | 6 | 8 | 2 | 5 | 7 | 2 | 6 | 4 | 5 | 2 | 9 |
| China | 2 | 5 | 0 | 5 | 9 | 6 | 9 | 4 | 3 | 7 | 4 | 4 | 7 | 9 | 8 |
| Colombia | 2 | 4 | 7 | 5 | 7 | 1 | 2 | 7 | 6 | 2 | 2 | 6 | 5 | 1 | 9 |
| Congo (Bra) | 2 | 3 | 7 | 8 | 8 | 1 | 2 | 4 | 5 | 0 | 2 | 9 | 7 | 6 | 8 |
| Congo (Leo) | 3 | 4 | 6 | 9 | 8 | 2 | 1 | 7 | 5 | 9 | 2 | 7 | 9 | 6 | 8 |
| Costa Rica | 5 | 5 | 8 | 7 | 6 | 1 | 1 | 9 | 5 | 2 | 4 | 5 | 4 | 1 | 9 |
| Cuba | 5 | 9 | 7 | 4 | 6 | 3 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 3 | 9 |
| Cyprus | 3 | 9 | 9 | 5 | 5 | 1 | 1 | 4 | 4 | 9 | 2 | 4 | 6 | 9 | 6 |
| Czechoslovakia | 3 | 4 | 1 | 2 | 6 | 7 | 8 | 2 | 1 | 2 | 7 | 4 | 4 | 4 | 9 |
| Dahomey | 3 | 8 | 8 | 9 | 8 | 1 | 3 | 3 | 6 | 3 | 4 | 7 | 9 | 7 | 6 |
| Denmark | 5 | 9 | 6 | 2 | 3 | 6 | 2 | 2 | 2 | 0 | 9 | 4 | 3 | 9 | 9 |
| Dominican Rep. | 5 | 8 | 8 | 8 | 7 | 1 | 2 | 8 | 4 | 9 | 4 | 4 | 5 | 1 | 9 |
| Ecuador | 2 | 7 | 7 | 8 | 8 | 1 | 2 | 7 | 8 | 6 | 4 | 4 | 5 | 2 | 9 |
| El Salvador | 4 | 9 | 8 | 8 | 7 | 1 | 2 | 6 | 8 | 8 | 6 | 4 | 6 | 1 | 9 |
| Ethiopia | 4 | 8 | 7 | 9 | 9 | 2 | 5 | 6 | 5 | 5 | 4 | 8 | 9 | 9 | 4 |
| Finland | 4 | 6 | 4 | 3 | 4 | 6 | 5 | 3 | 3 | 0 | 9 | 4 | 3 | 9 | 9 |
| France | 5 | 5 | 3 | 2 | 5 | 7 | 6 | 3 | 2 | 5 | 8 | 4 | 3 | 3 | 9 |
| Gabon | 2 | 3 | 7 | 8 | 8 | 1 | 2 | 0 | 1 | 7 | 7 | 9 | 9 | 6 | 8 |
| Germany, E | 3 | 4 | 1 | 1 | 6 | 8 | 8 | 1 | 1 | 3 | 6 | 3 | 4 | 7 | 9 |
| German Fr | 2 | 2 | 2 | 2 | 5 | 9 | 4 | 0 | 2 | 3 | 8 | 3 | 3 | 5 | 9 |
| Ghana | 2 | 7 | 6 | 9 | 6 | 3 | 1 | 8 | 6 | 8 | 3 | 8 | 8 | 7 | 6 |
| Greece | 5 | 7 | 7 | 5 | 7 | 1 | 3 | 1 | 3 | 0 | 6 | 5 | 4 | 9 | 8 |
| Guatemala | 6 | 6 | 7 | 8 | 7 | 2 | 1 | 6 | 8 | 8 | 3 | 4 | 5 | 2 | 9 |
| Guinea | 4 | 8 | 8 | 9 | 8 | 9 | 2 | 7 | 2 | 1 | 5 | 8 | 9 | 9 | 3 |
| Haiti | 5 | 9 | 8 | 9 | 8 | 1 | 1 | 5 | 3 | 9 | 4 | 4 | 8 | 4 | 9 |
| Hondoras | 4 | 5 | 8 | 8 | 7 | 1 | 2 | 9 | 7 | 6 | 2 | 6 | 6 | 1 | 9 |
| Hungary | 6 | 8 | 4 | 2 | 7 | 6 | 8 | 1 | 1 | 3 | 0 | 4 | 5 | 4 | 9 |

| | | | | | Variable | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 |
| | | | | | Row | | | | |
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Afghanistan | 3 | 0 | 8 | 4 | 5 | 8 | 3 | 2 | 2 |
| Albania | 4 | 0 | 6 | 3 | 5 | 0 | 5 | 3 | 0 |
| Algeria | 4 | 0 | 1 | 7 | 8 | 3 | 3 | 3 | 4 |
| Argentina | 9 | 0 | 7 | 6 | 5 | 7 | 6 | 5 | 9 |
| Australia | 5 | 6 | 7 | 4 | 6 | 6 | 9 | 7 | 9 |
| Austria | 1 | 2 | 5 | 5 | 2 | 2 | 7 | 6 | 9 |
| Belgium | 6 | 3 | 4 | 8 | 2 | 2 | 7 | 7 | 9 |
| Bolivia | 9 | 1 | 3 | 8 | 5 | 6 | 6 | 3 | 9 |
| Brazil | 5 | 4 | 8 | 8 | 7 | 6 | 7 | 5 | 9 |
| Bulgaria | 2 | 4 | 7 | 6 | 4 | 0 | 5 | 5 | 0 |
| Burma | 5 | 5 | 6 | 7 | 8 | 4 | 5 | 2 | 2 |
| Burundi | 9 | 9 | 7 | 8 | 4 | 6 | 2 | 1 | 4 |
| Cambodia | 7 | 0 | 7 | 9 | 7 | 4 | 3 | 2 | 2 |
| Cameroun | 6 | 5 | 3 | 5 | 8 | 1 | 2 | 1 | 6 |
| Canada | 7 | 5 | 6 | 4 | 2 | 5 | 9 | 7 | 9 |
| Central Afr. Rep. | 7 | 0 | 6 | 6 | 7 | 6 | 2 | 1 | 6 |
| Ceylon | 7 | 5 | 3 | 7 | 8 | 3 | 5 | 3 | 2 |
| Chad | 7 | 2 | 4 | 6 | 7 | 7 | 2 | 1 | 6 |
| Chile | 7 | 2 | 7 | 7 | 5 | 4 | 9 | 5 | 9 |
| China | 3 | 3 | 9 | 3 | 5 | 0 | 4 | 3 | 1 |
| Colombia | 6 | 1 | 7 | 7 | 7 | 6 | 6 | 4 | 9 |
| Congo (Bra) | 7 | 0 | 1 | 7 | 8 | 8 | 2 | 2 | 6 |
| Congo (Leo) | 6 | 9 | 3 | 8 | 8 | 8 | 2 | 1 | 3 |
| Costa Rica | 5 | 1 | 5 | 7 | 7 | 6 | 8 | 5 | 8 |
| Cuba | 7 | 3 | 3 | 6 | 5 | 1 | 7 | 5 | 0 |
| Cyprus | 7 | 0 | 2 | 6 | 5 | 2 | 1 | 5 | 3 |
| Czechoslovakia | 2 | 4 | 6 | 5 | 2 | 0 | 5 | 6 | 0 |
| Dahomey | 3 | 0 | 8 | 7 | 7 | 7 | 2 | 1 | 6 |
| Denmark | 5 | 2 | 4 | 7 | 2 | 4 | 8 | 7 | 9 |
| Dominican Rep. | 7 | 9 | 6 | 4 | 8 | 3 | 4 | 3 | 9 |
| Ecuador | 7 | 9 | 7 | 8 | 5 | 4 | 6 | 4 | 9 |
| El Salvador | 7 | 6 | 5 | 8 | 5 | 6 | 6 | 3 | 9 |
| Ethiopia | 4 | 2 | 7 | 1 | 5 | 7 | 0 | 1 | 2 |
| Finland | 5 | 3 | 5 | 8 | 1 | 3 | 7 | 7 | 8 |
| France | 5 | 6 | 7 | 9 | 2 | 1 | 7 | 7 | 8 |
| Gabon | 7 | 9 | 1 | 4 | 9 | 3 | 2 | 2 | 6 |
| Germany, E. | 2 | 5 | 6 | 4 | 2 | 1 | 5 | 7 | 7 |
| German Fr | 2 | 7 | 6 | 2 | 2 | 2 | 6 | 6 | 1 |
| Ghana | 6 | 1 | 5 | 3 | 7 | 2 | 2 | 3 | 2 |
| Greece | 3 | 0 | 7 | 8 | 5 | 4 | 6 | 5 | 9 |
| Guatemala | 7 | 2 | 6 | 7 | 6 | 5 | 6 | 3 | 9 |
| Guinea | 4 | 2 | 4 | 4 | 7 | 4 | 3 | 1 | 2 |
| Haiti | 9 | 3 | 7 | 8 | 7 | 2 | 4 | 2 | 8 |
| Hondoras | 8 | 5 | 6 | 6 | 6 | 6 | 5 | 2 | 9 |
| Hungary | 4 | 5 | 7 | 8 | 2 | 0 | 5 | 5 | 0 |

| | | | | | | | | | | | | Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | | | | | | | | | Card 1 | | Row | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Iceland | 0 | 4 | 6 | | 3 | 8 | 9 | 9 | 5 | 3 | 5 | 9 | 2 | 9 | 5 | 0 | 1 | 0 | 1 | 2 |
| India | 0 | 4 | 7 | | 8 | 2 | 1 | 3 | 5 | 7 | 2 | 2 | 8 | 3 | 7 | 8 | 1 | 7 | 8 | 4 |
| Indonesia | 0 | 4 | 8 | | 9 | 2 | 2 | 5 | 5 | 8 | 3 | 3 | 6 | 5 | 9 | 8 | 7 | 7 | 8 | 3 |
| Iran | 0 | 4 | 9 | | 5 | 2 | 4 | 8 | 6 | 6 | 1 | 6 | 6 | 7 | 9 | 8 | 7 | 7 | 9 | 2 |
| Iraq | 0 | 5 | 0 | | 5 | 4 | 6 | 7 | 3 | 6 | 1 | 6 | 6 | 7 | 7 | 8 | 6 | 7 | 8 | 2 |
| Ireland | 0 | 5 | 1 | | 3 | 8 | 8 | 6 | 9 | 3 | 5 | 6 | 2 | 7 | 5 | 2 | 1 | 2 | 0 | 3 |
| Israel | 0 | 5 | 2 | | 5 | 9 | 8 | 3 | 3 | 1 | 8 | 6 | 2 | 7 | 3 | 0 | 4 | 2 | 8 | 4 |
| Italy | 0 | 5 | 3 | | 3 | 5 | 3 | 2 | 8 | 5 | 7 | 2 | 2 | 3 | 2 | 1 | 1 | 3 | 0 | 1 |
| Ivory Coast | 0 | 5 | 4 | | 6 | 5 | 8 | 8 | 5 | 8 | 1 | 8 | 6 | 9 | 9 | 8 | 5 | 8 | 7 | 7 |
| Jamaica | 0 | 5 | 5 | | 1 | 9 | 9 | 3 | 6 | 2 | 5 | 7 | 4 | 7 | 7 | 2 | 1 | 5 | 3 | 7 |
| Japan | 0 | 5 | 6 | | 7 | 4 | 2 | 1 | 8 | 3 | 5 | 2 | 4 | 3 | 5 | 0 | 1 | 0 | 9 | 6 |
| Jordan | 0 | 5 | 7 | | 5 | 8 | 9 | 7 | 5 | 5 | 4 | 9 | 6 | 9 | 9 | 8 | 9 | 7 | 8 | 2 |
| Korea, N | 0 | 5 | 8 | | 7 | 7 | 6 | 5 | 4 | 6 | 1 | 7 | 8 | 7 | 9 | 3 | 9 | 4 | 8 | 8 |
| Korea Rep | 0 | 5 | 9 | | 7 | 8 | 4 | 1 | 4 | 6 | 2 | 5 | 6 | 7 | 9 | 2 | 7 | 5 | 8 | 8 |
| Laos | 0 | 6 | 0 | | 9 | 6 | 9 | 9 | 4 | 9 | 0 | 9 | 8 | 9 | 9 | 8 | 4 | 9 | 9 | 5 |
| Lebanon | 0 | 6 | 1 | | 5 | 9 | 9 | 2 | 3 | 6 | 4 | 7 | 4 | 7 | 3 | 5 | 4 | 4 | 5 | 7 |
| Liberia | 0 | 6 | 2 | | 6 | 8 | 9 | 8 | 7 | 9 | 1 | 9 | 6 | 9 | 9 | 9 | 4 | 9 | 8 | 8 |
| Libya | 0 | 6 | 3 | | 5 | 2 | 9 | 9 | 6 | 6 | 1 | 9 | 8 | 9 | 7 | 8 | 4 | 8 | 8 | 2 |
| Luxembourg | 0 | 6 | 4 | | 3 | 9 | 9 | 3 | 8 | 5 | 7 | 8 | 1 | 7 | 2 | 0 | 1 | 0 | 0 | 2 |
| Malagasy R | 0 | 6 | 5 | | 6 | 4 | 7 | 9 | 3 | 8 | 1 | 8 | 7 | 9 | 9 | 6 | 1 | 8 | 5 | 8 |
| Malaya | 0 | 6 | 6 | | 9 | 7 | 6 | 5 | 3 | 6 | 4 | 6 | 4 | 7 | 7 | 6 | 1 | 5 | 8 | 8 |
| Mali | 0 | 6 | 7 | | 6 | 2 | 7 | 9 | 3 | 9 | 1 | 8 | 8 | 9 | 9 | 8 | 1 | 8 | 8 | 5 |
| Mauritania | 0 | 6 | 8 | | 6 | 3 | 9 | 9 | 3 | 8 | 1 | 8 | 7 | 9 | 9 | 8 | 1 | 8 | 9 | 1 |
| Mexico | 0 | 6 | 9 | | 1 | 2 | 3 | 7 | 3 | 6 | 4 | 4 | 5 | 5 | 5 | 4 | 1 | 4 | 0 | 2 |
| Mongolia | 0 | 7 | 0 | | 7 | 2 | 9 | 9 | 3 | 7 | 2 | 9 | 8 | 9 | 9 | 4 | 9 | 3 | 9 | 3 |
| Morocco | 0 | 7 | 1 | | 5 | 4 | 5 | 7 | 4 | 6 | 2 | 6 | 6 | 7 | 9 | 8 | 4 | 7 | 8 | 3 |
| Nepal | 0 | 7 | 2 | | 8 | 7 | 6 | 5 | 6 | 9 | 0 | 8 | 8 | 9 | 9 | 9 | 7 | 9 | 9 | 6 |
| Netherlands | 0 | 7 | 3 | | 3 | 9 | 5 | 1 | 7 | 2 | 8 | 4 | 2 | 5 | 2 | 0 | 1 | 2 | 2 | 8 |
| New Zealand | 0 | 7 | 4 | | 9 | 5 | 8 | 9 | 5 | 1 | 8 | 5 | 1 | 5 | 2 | 0 | 1 | 1 | 3 | 8 |
| Nicaragua | 0 | 7 | 5 | | 1 | 7 | 9 | 8 | 2 | 6 | 3 | 9 | 6 | 9 | 9 | 6 | 5 | 5 | 0 | 3 |
| Niger | 0 | 7 | 6 | | 6 | 3 | 8 | 9 | 3 | 8 | 1 | 8 | 8 | 9 | 9 | 6 | 1 | 9 | 9 | 4 |
| Nigeria | 0 | 7 | 7 | | 6 | 3 | 3 | 6 | 6 | 7 | 4 | 5 | 7 | 7 | 9 | 8 | 4 | 8 | 7 | 8 |
| Norway | 0 | 7 | 8 | | 3 | 5 | 7 | 8 | 8 | 4 | 7 | 5 | 1 | 5 | 2 | 0 | 1 | 1 | 1 | 2 |
| Pakistan | 0 | 7 | 9 | | 8 | 3 | 2 | 3 | 5 | 8 | 3 | 4 | 8 | 5 | 7 | 8 | 7 | 8 | 8 | 4 |
| Panama | 0 | 8 | 0 | | 1 | 8 | 9 | 8 | 4 | 4 | 4 | 8 | 4 | 9 | 9 | 3 | 1 | 3 | 0 | 5 |
| Paraguay | 0 | 8 | 1 | | 2 | 4 | 9 | 9 | 5 | 6 | 4 | 9 | 6 | 9 | 9 | 3 | 9 | 6 | 2 | 2 |
| Peru | 0 | 8 | 2 | | 2 | 2 | 5 | 9 | 5 | 7 | 3 | 6 | 6 | 7 | 7 | 5 | 4 | 4 | 1 | 2 |
| Philippines | 0 | 8 | 3 | | 9 | 5 | 4 | 4 | 3 | 7 | 4 | 5 | 5 | 5 | 7 | 2 | 1 | 7 | 1 | 4 |
| Poland | 0 | 8 | 4 | | 4 | 5 | 4 | 4 | 7 | 5 | 4 | 3 | 3 | 5 | 5 | 0 | 7 | 3 | 1 | 2 |
| Portugal | 0 | 8 | 5 | | 3 | 8 | 6 | 3 | 8 | 6 | 5 | 6 | 5 | 7 | 7 | 4 | 7 | 4 | 1 | 3 |
| Rumania | 0 | 8 | 6 | | 4 | 6 | 5 | 4 | 8 | 6 | 2 | 4 | 4 | 5 | 5 | 1 | 9 | 3 | 1 | 5 |
| Rwanda | 0 | 8 | 7 | | 6 | 9 | 8 | 3 | 7 | 8 | 1 | 8 | 9 | 9 | 9 | 9 | 5 | 8 | 4 | 8 |
| Saudi Arabia | 0 | 8 | 8 | | 5 | 2 | 6 | 9 | 3 | 8 | 4 | 6 | 6 | 7 | 4 | 9 | 9 | 8 | 9 | 1 |
| Senegal | 0 | 8 | 9 | | 6 | 6 | 8 | 8 | 3 | 7 | 1 | 8 | 6 | 7 | 9 | 8 | 5 | 8 | 8 | 5 |
| Sierre Leone | 0 | 9 | 0 | | 6 | 8 | 8 | 6 | 4 | 9 | 0 | 8 | 8 | 9 | 9 | 9 | 1 | 8 | 7 | 7 |
| Somalia | 0 | 9 | 1 | | 6 | 4 | 8 | 9 | 8 | 9 | 1 | 9 | 8 | 9 | 9 | 8 | 1 | 8 | 9 | 2 |

| Variable | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Iceland | 3 | 6 | 7 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| India | 3 | 7 | 9 | 4 | 4 | 7 | 1 | 4 | 9 | 1 | 3 | 1 | 1 | 1 | 5 |
| Indonesia | 3 | 6 | 9 | 7 | 1 | 7 | 7 | 3 | 3 | 7 | 6 | 7 | 5 | 4 | 9 |
| Iran | 3 | 6 | 1 | 7 | 9 | 4 | 3 | 6 | 9 | 7 | 9 | 9 | 5 | 4 | 9 |
| Iraq | 3 | 6 | 7 | 7 | 4 | 7 | 1 | 5 | 9 | 5 | 9 | 6 | 5 | 5 | 9 |
| Ireland | 3 | 2 | 7 | 1 | 4 | 3 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Israel | 3 | 5 | 9 | 3 | 4 | 7 | 1 | 3 | 3 | 1 | 3 | 1 | 1 | 1 | 5 |
| Italy | 3 | 2 | 3 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 5 |
| Ivory Coast | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 3 | 3 | 6 | 7 | 9 | 6 | 5 |
| Jamaica | 8 | 2 | 9 | 4 | 4 | 7 | 7 | 4 | 9 | 1 | 6 | 1 | 1 | 1 | 5 |
| Japan | 3 | 2 | 1 | 3 | 9 | 4 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 1 |
| Jordan | 3 | 2 | 9 | 7 | 4 | 7 | 1 | 9 | 9 | 7 | 9 | 7 | 4 | 7 | 9 |
| Korea, N | 3 | 2 | 8 | 6 | 1 | 7 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Korea Rep | 3 | 2 | 8 | 6 | 9 | 7 | 1 | 5 | 6 | 7 | 9 | 6 | 5 | 5 | 9 |
| Laos | 3 | 3 | 9 | 7 | 3 | 7 | 7 | 7 | 9 | 7 | 9 | 7 | 4 | 7 | 9 |
| Lebanon | 3 | 2 | 7 | 4 | 3 | 7 | 1 | 9 | 9 | 1 | 9 | 4 | 4 | 1 | 9 |
| Liberia | 3 | 9 | 3 | 6 | 9 | 7 | 7 | 4 | 9 | 7 | 1 | 3 | 9 | 6 | 9 |
| Libya | 3 | 2 | 9 | 7 | 1 | 7 | 7 | 6 | 9 | 1 | 3 | 4 | 3 | 4 | 5 |
| Luxembourg | 3 | 2 | 1 | 1 | 9 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Malagasy R | 4 | 2 | 9 | 7 | 3 | 9 | 7 | 4 | 9 | 1 | 6 | 1 | 1 | 1 | 5 |
| Malaya | 8 | 6 | 9 | 7 | 4 | 7 | 7 | 3 | 9 | 1 | 3 | 1 | 1 | 1 | 9 |
| Mali | 8 | 8 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 5 | 6 | 7 | 9 | 6 | 6 |
| Mauritania | 8 | 4 | 3 | 7 | 3 | 9 | 7 | 3 | 3 | 1 | 6 | 7 | 9 | 4 | 5 |
| Mexico | 8 | 2 | 7 | 4 | 2 | 3 | 1 | 7 | 9 | 1 | 3 | 1 | 4 | 4 | 5 |
| Mongolia | 3 | 4 | 9 | 6 | 9 | 7 | 7 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Morocco | 3 | 4 | 1 | 7 | 3 | 7 | 7 | 6 | 3 | 1 | 3 | 1 | 5 | 4 | 5 |
| Nepal | 4 | 6 | 1 | 9 | 9 | 4 | 7 | 6 | 4 | 7 | 9 | 9 | 5 | 6 | 9 |
| Netherlands | 3 | 2 | 3 | 1 | 9 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 5 |
| New Zealand | 3 | 2 | 3 | 1 | 4 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nicaragua | 8 | 2 | 3 | 4 | 2 | 3 | 1 | 4 | 9 | 7 | 6 | 7 | 6 | 4 | 9 |
| Niger | 8 | 8 | 9 | 7 | 3 | 9 | 3 | 3 | 9 | 5 | 6 | 7 | 5 | 6 | 9 |
| Nigeria | 3 | 8 | 9 | 7 | 4 | 9 | 7 | 4 | 9 | 1 | 5 | 4 | 5 | 5 | 9 |
| Norway | 3 | 1 | 1 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Pakistan | 3 | 6 | 9 | 7 | 4 | 7 | 1 | 4 | 6 | 7 | 9 | 7 | 4 | 5 | 9 |
| Panama | 8 | 2 | 3 | 4 | 2 | 3 | 3 | 5 | 9 | 1 | 9 | 1 | 1 | 1 | 9 |
| Paraguay | 4 | 2 | 3 | 4 | 2 | 3 | 3 | 6 | 9 | 7 | 4 | 7 | 6 | 4 | 6 |
| Peru | 8 | 6 | 3 | 4 | 2 | 3 | 3 | 4 | 9 | 6 | 9 | 6 | 5 | 5 | 9 |
| Philippines | 3 | 8 | 9 | 4 | 1 | 7 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 5 |
| Poland | 3 | 3 | 7 | 1 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 6 | 5 |
| Portugal | 3 | 2 | 1 | 1 | 9 | 3 | 1 | 6 | 9 | 9 | 1 | 7 | 9 | 6 | 6 |
| Rumania | 3 | 3 | 3 | 3 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Rwanda | 3 | 4 | 9 | 7 | 1 | 9 | 7 | 3 | 9 | 5 | 7 | 6 | 5 | 4 | 6 |
| Saudi Arabia | 5 | 2 | 7 | 9 | 9 | 7 | 9 | 9 | 9 | 7 | 1 | 9 | 5 | 6 | 9 |
| Senegal | 3 | 8 | 9 | 7 | 3 | 1 | 7 | 3 | 3 | 5 | 6 | 7 | 6 | 5 | 5 |
| Sierre Leone | 3 | 7 | 9 | 7 | 4 | 1 | 7 | 3 | 9 | 1 | 6 | 1 | 1 | 1 | 5 |
| Somalia | 3 | 2 | 9 | 7 | 1 | 9 | 7 | 3 | 9 | 5 | 6 | 4 | 6 | 4 | 5 |

| Variable | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| Iceland | 9 | 5 | 7 | 9 | 9 | 1 | 7 | 3 | 3 | 9 | 6 | 1 | 9 | 9 | 9 |
| India | 1 | 7 | 3 | 1 | 3 | 4 | 3 | 1 | 3 | 3 | 3 | 1 | 9 | 9 | 1 |
| Indonesia | 1 | 7 | 1 | 1 | 3 | 5 | 3 | 1 | 6 | 4 | 3 | 3 | 4 | 9 | 1 |
| Iran | 1 | 7 | 1 | 1 | 1 | 6 | 6 | 7 | 6 | 5 | 8 | 5 | 5 | 5 | 4 |
| Iraq | 1 | 9 | 1 | 1 | 1 | 6 | 6 | 5 | 6 | 5 | 8 | 9 | 5 | 6 | 6 |
| Ireland | 9 | 5 | 5 | 7 | 9 | 4 | 3 | 3 | 1 | 9 | 3 | 1 | 9 | 9 | 9 |
| Israel | 9 | 5 | 3 | 5 | 7 | 1 | 8 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Italy | 4 | 2 | 3 | 7 | 7 | 4 | 7 | 3 | 3 | 9 | 6 | 4 | 9 | 9 | 9 |
| Ivory Coast | 9 | 9 | 3 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 1 | 4 | 4 | 9 | 1 |
| Jamaica | 9 | 7 | 5 | 5 | 7 | 4 | 3 | 3 | 3 | 7 | 6 | 5 | 9 | 9 | 3 |
| Japan | 9 | 2 | 3 | 5 | 3 | 4 | 3 | 3 | 3 | 6 | 6 | 1 | 4 | 9 | 9 |
| Jordan | 1 | 9 | 1 | 2 | 1 | 6 | 6 | 7 | 7 | 5 | 8 | 9 | 5 | 1 | 3 |
| Korea, N | 9 | 9 | 1 | 2 | 8 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 3 |
| Korea Rep | 9 | 6 | 1 | 2 | 3 | 6 | 6 | 5 | 6 | 5 | 8 | 9 | 5 | 6 | 9 |
| Laos | 1 | 9 | 1 | 2 | 1 | 5 | 8 | 8 | 7 | 9 | 7 | 9 | 1 | 1 | 5 |
| Lebanon | 4 | 5 | 1 | 2 | 3 | 1 | 8 | 8 | 3 | 9 | 7 | 9 | 1 | 5 | 9 |
| Liberia | 4 | 9 | 1 | 5 | 7 | 4 | 3 | 7 | 7 | 2 | 3 | 1 | 4 | 1 | 9 |
| Libya | 1 | 9 | 3 | 5 | 7 | 9 | 9 | 7 | 5 | 1 | 4 | 2 | 3 | 4 | 3 |
| Luxembourg | 9 | 2 | 7 | 9 | 9 | 1 | 7 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Malagasy R | 1 | 9 | 5 | 2 | 7 | 4 | 3 | 3 | 7 | 3 | 2 | 4 | 9 | 9 | 9 |
| Malaya | 4 | 7 | 3 | 2 | 3 | 4 | 3 | 1 | 7 | 4 | 3 | 4 | 9 | 9 | 9 |
| Mali | 5 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 5 | 4 | 9 | 3 | 9 |
| Mauritania | 4 | 9 | 3 | 2 | 3 | 7 | 3 | 1 | 7 | 2 | 2 | 5 | 4 | 4 | 3 |
| Mexico | 3 | 5 | 3 | 5 | 3 | 8 | 1 | 1 | 7 | 3 | 5 | 1 | 9 | 4 | 9 |
| Mongolia | 9 | 9 | 1 | 2 | 8 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| Morocco | 1 | 7 | 3 | 5 | 3 | 4 | 3 | 1 | 6 | 4 | 3 | 5 | 9 | 9 | 3 |
| Nepal | 5 | 9 | 3 | 2 | 3 | 6 | 6 | 9 | 7 | 5 | 8 | 9 | 5 | 1 | 5 |
| Netherlands | 4 | 2 | 5 | 7 | 9 | 1 | 7 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| New Zealand | 9 | 2 | 7 | 9 | 9 | 4 | 1 | 3 | 3 | 7 | 6 | 1 | 9 | 9 | 9 |
| Nicaragua | 5 | 7 | 3 | 5 | 7 | 7 | 8 | 9 | 5 | 4 | 6 | 4 | 1 | 1 | 9 |
| Niger | 5 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 2 | 5 | 4 | 9 | 3 |
| Nigeria | 1 | 9 | 3 | 2 | 3 | 1 | 3 | 7 | 5 | 9 | 2 | 5 | 9 | 5 | 4 |
| Norway | 9 | 2 | 7 | 9 | 9 | 1 | 7 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Pakistan | 1 | 9 | 1 | 2 | 1 | 6 | 6 | 5 | 6 | 5 | 8 | 9 | 5 | 5 | 3 |
| Panama | 9 | 7 | 3 | 7 | 3 | 4 | 8 | 7 | 5 | 9 | 7 | 9 | 1 | 4 | 9 |
| Paraguay | 9 | 9 | 1 | 7 | 3 | 7 | 8 | 9 | 7 | 3 | 6 | 4 | 9 | 1 | 9 |
| Peru | 4 | 7 | 3 | 5 | 3 | 1 | 6 | 5 | 6 | 9 | 6 | 9 | 4 | 4 | 9 |
| Philippines | 4 | 2 | 5 | 2 | 7 | 8 | 1 | 1 | 3 | 7 | 5 | 1 | 9 | 4 | 9 |
| Poland | 9 | 7 | 1 | 5 | 3 | 8 | 5 | 7 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| Portugal | 9 | 3 | 1 | 7 | 7 | 8 | 5 | 9 | 6 | 2 | 4 | 1 | 9 | 1 | 9 |
| Rumania | 9 | 9 | 1 | 5 | 8 | 8 | 5 | 3 | 7 | 2 | 0 | 1 | 9 | 1 | 9 |
| Rwanda | 9 | 9 | 6 | 2 | 1 | 7 | 5 | 9 | 7 | 3 | 2 | 5 | 6 | 5 | 5 |
| Saudi Arabia | 9 | 9 | 3 | 2 | 3 | 9 | 8 | 1 | 9 | 1 | 4 | 2 | 3 | 1 | 3 |
| Senegal | 4 | 9 | 3 | 2 | 3 | 8 | 1 | 3 | 7 | 2 | 1 | 4 | 9 | 9 | 3 |
| Sierre Leone | 4 | 9 | 6 | 2 | 3 | 4 | 7 | 3 | 5 | 7 | 2 | 9 | 9 | 4 | 9 |
| Somalia | 1 | 9 | 6 | 2 | 3 | 4 | 7 | 7 | 7 | 3 | 2 | 9 | 9 | 4 | 9 |

| Variable | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| Iceland | 9 | 1 | 1 | 8 | 9 | 4 | 1 | 9 | 9 | 1 | 7 | 9 | 4 | 2 | 2 |
| India | 5 | 1 | 1 | 8 | 9 | 1 | 3 | 9 | 9 | 9 | 7 | 8 | 5 | 3 | 5 |
| Indonesia | 0 | 9 | 8 | 7 | 1 | 1 | 5 | 5 | 1 | 6 | 9 | 6 | 7 | 3 | 5 |
| Iran | 9 | 9 | 6 | 5 | 9 | 1 | 9 | 5 | 1 | 7 | 9 | 4 | 7 | 3 | 5 |
| Iraq | 9 | 7 | 6 | 5 | 5 | 3 | 7 | 1 | 1 | 2 | 9 | 4 | 6 | 4 | 4 |
| Iceland | 9 | 1 | 1 | 8 | 9 | 4 | 1 | 9 | 9 | 4 | 9 | 7 | 2 | 2 | 1 |
| Israel | 9 | 1 | 1 | 8 | 1 | 4 | 1 | 9 | 9 | 3 | 9 | 2 | 3 | 2 | 3 |
| Italy | 9 | 1 | 1 | 8 | 9 | 4 | 1 | 9 | 9 | 0 | 6 | 5 | 1 | 2 | 4 |
| Ivory Coast | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 9 | 1 | 6 | 9 | 9 | 9 | 4 | 5 |
| Jamaica | 9 | 1 | 3 | 8 | 9 | 4 | 3 | 9 | 9 | 4 | 9 | 9 | 3 | 4 | 2 |
| Japan | 9 | 1 | 3 | 8 | 9 | 4 | 3 | 9 | 9 | 3 | 9 | 8 | 1 | 3 | 5 |
| Jordan | 0 | 9 | 5 | 9 | 9 | 1 | 9 | 5 | 1 | 7 | 9 | 1 | 8 | 5 | 5 |
| Korea, N | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 1 | 7 | 5 | 6 |
| Korea Rep | 9 | 7 | 6 | 5 | 5 | 3 | 3 | 1 | 1 | 3 | 9 | 2 | 7 | 4 | 5 |
| Laos | 9 | 9 | 3 | 9 | 9 | 6 | 9 | 4 | 1 | 2 | 9 | 3 | 9 | 3 | 6 |
| Lebanon | 9 | 6 | 4 | 4 | 1 | 4 | 3 | 5 | 1 | 2 | 9 | 8 | 4 | 3 | 5 |
| Liberia | 9 | 9 | 8 | 7 | 9 | 1 | 3 | 5 | 1 | 3 | 9 | 8 | 9 | 3 | 6 |
| Libya | 3 | 6 | 5 | 4 | 9 | 4 | 3 | 9 | 5 | 7 | 9 | 5 | 9 | 3 | 5 |
| Luxembourg | 9 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 0 | 9 | 6 | 1 | 1 | 2 |
| Malagasy R | 5 | 6 | 8 | 4 | 9 | 4 | 6 | 9 | 9 | 2 | 9 | 7 | 8 | 3 | 5 |
| Malay | 3 | 1 | 3 | 1 | 9 | 4 | 3 | 9 | 9 | 8 | 9 | 6 | 4 | 4 | 4 |
| Mali | 9 | 6 | 0 | 7 | 1 | 1 | 6 | 9 | 5 | 6 | 9 | 8 | 9 | 4 | 5 |
| Mauritania | 9 | 6 | 8 | 7 | 1 | 1 | 6 | 9 | 9 | 7 | 9 | 8 | 9 | 4 | 5 |
| Mexico | 5 | 6 | 8 | 4 | 9 | 1 | 3 | 9 | 9 | 0 | 9 | 6 | 2 | 4 | 5 |
| Mongolia | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 7 | 6 | 2 | 5 |
| Morocco | 9 | 6 | 5 | 4 | 9 | 1 | 3 | 9 | 1 | 7 | 9 | 8 | 5 | 3 | 6 |
| Nepal | 9 | 9 | 9 | 9 | 1 | 1 | 9 | 4 | 1 | 9 | 9 | 8 | 8 | 3 | 5 |
| Netherlands | 9 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 0 | 9 | 4 | 1 | 2 | 3 |
| New Zealand | 9 | 1 | 3 | 1 | 1 | 4 | 1 | 9 | 9 | 4 | 9 | 6 | 1 | 2 | 1 |
| Nicaragua | 9 | 6 | 8 | 7 | 9 | 1 | 3 | 1 | 1 | 0 | 9 | 8 | 7 | 4 | 5 |
| Niger | 9 | 9 | 8 | 7 | 1 | 5 | 6 | 9 | 5 | 6 | 9 | 8 | 9 | 4 | 5 |
| Nigeria | 3 | 6 | 3 | 4 | 9 | 4 | 6 | 9 | 1 | 8 | 9 | 9 | 8 | 4 | 5 |
| Norway | 9 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 1 | 9 | 5 | 1 | 2 | 2 |
| Pakistan | 3 | 9 | 8 | 5 | 1 | 1 | 5 | 1 | 1 | 8 | 9 | 7 | 7 | 3 | 5 |
| Panama | 9 | 6 | 8 | 4 | 1 | 4 | 3 | 1 | 5 | 0 | 9 | 9 | 6 | 4 | 4 |
| Paraguay | 9 | 9 | 8 | 9 | 1 | 1 | 3 | 1 | 1 | 0 | 8 | 6 | 8 | 4 | 5 |
| Peru | 9 | 7 | 6 | 5 | 9 | 3 | 3 | 1 | 3 | 0 | 8 | 7 | 5 | 4 | 3 |
| Philippines | 9 | 1 | 8 | 1 | 9 | 4 | 3 | 9 | 9 | 3 | 9 | 8 | 6 | 5 | 5 |
| Poland | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 5 | 1 | 2 | 3 |
| Portugal | 9 | 9 | 9 | 9 | 9 | 1 | 3 | 5 | 1 | 0 | 9 | 5 | 3 | 2 | 4 |
| Rumania | 9 | 9 | 2 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 5 | 4 | 2 | 3 |
| Rwanda | 9 | 6 | 8 | 7 | 1 | 5 | 6 | 9 | 5 | 2 | 9 | 8 | 8 | 3 | 6 |
| Saudi Arabia | 9 | 9 | 9 | 9 | 5 | 1 | 9 | 5 | 1 | 8 | 9 | 8 | 6 | 4 | 6 |
| Senegal | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 5 | 1 | 6 | 9 | 8 | 9 | 4 | 5 |
| Sierre Leone | 9 | 6 | 3 | 4 | 1 | 4 | 6 | 9 | 9 | 8 | 9 | 9 | 9 | 3 | 7 |
| Somalia | 9 | 6 | 1 | 7 | 1 | 5 | 6 | 4 | 1 | 6 | 9 | 8 | 9 | 3 | 5 |

| | Variable | | | | | | | | | | | Variable | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 |
| | | | | | | Row | | | | | | Card 2 | | Row | |
| | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 5 | 6 | 7 | 8 |
| Iceland | 4 | 2 | 9 | 2 | 1 | 0 | 4 | 5 | 2 | 9 | 7 | 9 | 4 | 9 | 9 |
| India | 2 | 6 | 3 | 8 | 9 | 5 | 5 | 4 | 5 | 1 | 4 | 3 | 5 | 9 | 6 |
| Indonesia | 2 | 9 | 7 | 8 | 9 | 0 | 5 | 4 | 1 | 9 | 1 | 3 | 7 | 9 | 1 |
| Iran | 4 | 6 | 6 | 6 | 8 | 2 | 6 | 7 | 5 | 6 | 4 | 6 | 6 | 9 | 1 |
| Iraq | 3 | 5 | 5 | 5 | 6 | 0 | 5 | 9 | 9 | 0 | 2 | 5 | 5 | 9 | 1 |
| Ireland | 5 | 5 | 7 | 3 | 4 | 5 | 1 | 4 | 3 | 8 | 9 | 6 | 4 | 2 | 9 |
| Israel | 3 | 9 | 7 | 3 | 5 | 2 | 2 | 4 | 2 | 1 | 6 | 4 | 3 | 9 | 7 |
| Italy | 1 | 8 | 5 | 3 | 7 | 7 | 4 | 1 | 1 | 0 | 8 | 3 | 4 | 0 | 9 |
| Ivory Coast | 3 | 8 | 8 | 9 | 8 | 1 | 3 | 7 | 1 | 8 | 6 | 7 | 9 | 8 | 5 |
| Jamaica | 3 | 8 | 7 | 5 | 6 | 3 | 1 | 7 | 3 | 0 | 6 | 3 | 8 | 6 | 9 |
| Japan | 3 | 6 | 2 | 3 | 7 | 9 | 8 | 2 | 3 | 0 | 8 | 1 | 2 | 9 | 9 |
| Jordan | 2 | 7 | 8 | 8 | 7 | 2 | 8 | 9 | 5 | 8 | 5 | 5 | 8 | 9 | 1 |
| Korea, N | 2 | 7 | 0 | 3 | 7 | 6 | 9 | 7 | 1 | 0 | 7 | 2 | 6 | 9 | 9 |
| Korea Rep | 2 | 8 | 5 | 6 | 9 | 3 | 6 | 7 | 7 | 0 | 4 | 1 | 4 | 9 | 9 |
| Laos | 4 | 5 | 9 | 9 | 9 | 1 | 9 | 6 | 5 | 0 | 2 | 5 | 9 | 9 | 9 |
| Lebanon | 5 | 9 | 8 | 5 | 6 | 4 | 7 | 5 | 6 | 4 | 4 | 2 | 4 | 6 | 4 |
| Liberia | 4 | 4 | 7 | 9 | 7 | 1 | 0 | 6 | 2 | 0 | 9 | 7 | 7 | 9 | 8 |
| Libya | 4 | 9 | 8 | 6 | 8 | 1 | 3 | 6 | 5 | 8 | 5 | 8 | 8 | 9 | 1 |
| Luxembourg | 2 | 4 | 3 | 2 | 2 | 8 | 3 | 0 | 3 | 4 | 7 | 3 | 8 | 1 | 9 |
| Malagasy R | 4 | 5 | 7 | 9 | 8 | 1 | 2 | 5 | 4 | 9 | 4 | 8 | 9 | 7 | 7 |
| Malaya | 4 | 8 | 7 | 7 | 4 | 2 | 5 | 7 | 5 | 6 | 1 | 3 | 4 | 9 | 3 |
| Mali | 3 | 8 | 8 | 9 | 8 | 1 | 3 | 3 | 8 | 1 | 5 | 7 | 9 | 9 | 3 |
| Mauritania | 3 | 8 | 8 | 9 | 8 | 1 | 3 | 2 | 6 | 0 | 5 | 7 | 8 | 9 | 0 |
| Mexico | 5 | 6 | 6 | 4 | 8 | 5 | 4 | 8 | 7 | 1 | 6 | 7 | 5 | 1 | 9 |
| Mongolia | 4 | 4 | 3 | 4 | 6 | 0 | 9 | 2 | 3 | 0 | 7 | 9 | 5 | 9 | 9 |
| Morocco | 3 | 9 | 4 | 8 | 7 | 3 | 2 | 6 | 5 | 9 | 4 | 6 | 8 | 8 | 1 |
| Nepal | 5 | 5 | 8 | 9 | 9 | 0 | 9 | 5 | 5 | 0 | 5 | 4 | 7 | 9 | 8 |
| Netherlands | 2 | 5 | 3 | 2 | 3 | 6 | 3 | 3 | 1 | 3 | 9 | 3 | 2 | 5 | 9 |
| New Zealand | 2 | 5 | 6 | 3 | 2 | 1 | 2 | 5 | 2 | 7 | 9 | 8 | 2 | 7 | 9 |
| Nicaragua | 4 | 6 | 8 | 8 | 6 | 0 | 3 | 8 | 1 | 7 | 4 | 5 | 5 | 2 | 9 |
| Niger | 3 | 8 | 8 | 9 | 8 | 1 | 3 | 6 | 8 | 0 | 6 | 7 | 9 | 9 | 2 |
| Nigeria | 2 | 7 | 5 | 9 | 8 | 1 | 1 | 8 | 6 | 8 | 6 | 6 | 9 | 9 | 5 |
| Norway | 4 | 2 | 6 | 2 | 3 | 7 | 3 | 2 | 3 | 1 | 9 | 3 | 5 | 9 | 9 |
| Pakistan | 2 | 9 | 6 | 7 | 9 | 2 | 5 | 8 | 9 | 0 | 5 | 4 | 5 | 9 | 2 |
| Panama | 5 | 6 | 8 | 5 | 6 | 1 | 1 | 8 | 5 | 0 | 4 | 5 | 4 | 4 | 9 |
| Paraguay | 6 | 5 | 8 | 9 | 8 | 1 | 5 | 9 | 8 | 1 | 3 | 4 | 5 | 1 | 9 |
| Peru | 6 | 4 | 7 | 6 | 7 | 5 | 3 | 8 | 7 | 1 | 4 | 6 | 5 | 1 | 9 |
| Philippines | 6 | 8 | 7 | 8 | 8 | 3 | 3 | 8 | 5 | 2 | 2 | 3 | 2 | 3 | 7 |
| Poland | 1 | 1 | 2 | 3 | 7 | 5 | 7 | 3 | 1 | 5 | 5 | 4 | 4 | 2 | 9 |
| Portugal | 4 | 8 | 7 | 6 | 7 | 6 | 5 | 2 | 9 | 3 | 6 | 4 | 5 | 2 | 9 |
| Rumania | 5 | 7 | 6 | 3 | 8 | 3 | 8 | 1 | 1 | 1 | 9 | 4 | 5 | 8 | 9 |
| Rwanda | 1 | 6 | 7 | 9 | 8 | 1 | 1 | 6 | 1 | 0 | 3 | 4 | 9 | 6 | 9 |
| Saudi Arabia | 1 | 4 | 7 | 7 | 6 | 0 | 3 | 6 | 9 | 0 | 8 | 9 | 9 | 9 | 0 |
| Senegal | 3 | 8 | 8 | 8 | 8 | 1 | 3 | 8 | 5 | 9 | 7 | 7 | 7 | 9 | 3 |
| Sierre Leone | 5 | 6 | 8 | 9 | 8 | 3 | 1 | 6 | 9 | 3 | 6 | 7 | 9 | 9 | 6 |
| Somalia | 4 | 9 | 9 | 9 | 9 | 1 | 3 | 6 | 5 | 8 | 7 | 9 | 8 | 9 | 1 |

| Variable | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| Row | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Iceland | 7 | 3 | 5 | 7 | 3 | 2 | 8 | 6 | 9 |
| India | 7 | 0 | 8 | 2 | 6 | 7 | 5 | 2 | 2 |
| Indonesia | 7 | 5 | 7 | 8 | 8 | 6 | 5 | 2 | 2 |
| Iran | 2 | 0 | 6 | 9 | 6 | 4 | 3 | 2 | 9 |
| Iraq | 3 | 9 | 3 | 9 | 7 | 2 | 4 | 3 | 2 |
| Ireland | 7 | 0 | 4 | 7 | 2 | 3 | 9 | 6 | 9 |
| Israel | 3 | 0 | 7 | 7 | 7 | 2 | 6 | 5 | 9 |
| Italy | 3 | 2 | 7 | 8 | 5 | 2 | 7 | 5 | 9 |
| Ivory Coast | 3 | 7 | 3 | 4 | 7 | 5 | 1 | 1 | 6 |
| Jamaica | 2 | 2 | 5 | 6 | 7 | 5 | 1 | 4 | 7 |
| Japan | 1 | 1 | 7 | 8 | 3 | 1 | 6 | 6 | 9 |
| Jordan | 3 | 0 | 4 | 9 | 8 | 3 | 3 | 2 | 3 |
| Korea, N | 2 | 2 | 5 | 6 | 1 | 0 | 4 | 2 | 1 |
| Korea Rep | 6 | 0 | 8 | 5 | 3 | 3 | 4 | 2 | 7 |
| Laos | 9 | 0 | 4 | 9 | 5 | 7 | 3 | 1 | 7 |
| Lebanon | 8 | 0 | 4 | 9 | 5 | 5 | 5 | 4 | 3 |
| Liberia | 3 | 0 | 2 | 1 | 9 | 5 | 8 | 2 | 4 |
| Libya | 7 | 0 | 2 | 7 | 8 | 4 | 4 | 3 | 3 |
| Luxembourg | 7 | 3 | 4 | 5 | 2 | 4 | 7 | 7 | 9 |
| Malagasy R | 8 | 1 | 4 | 4 | 7 | 5 | 2 | 2 | 6 |
| Malaya | 8 | 7 | 4 | 5 | 9 | 5 | 4 | 3 | 8 |
| Mali | 3 | 0 | 7 | 5 | 8 | 5 | 2 | 0 | 2 |
| Mauritania | 2 | 0 | 4 | 6 | 8 | 4 | 2 | 1 | 5 |
| Mexico | 6 | 1 | 8 | 5 | 6 | 7 | 7 | 4 | 9 |
| Mongolia | 6 | 1 | 5 | 4 | 5 | 5 | 4 | 4 | 0 |
| Morocco | 9 | 1 | 6 | 5 | 6 | 4 | 1 | 3 | 2 |
| Nepal | 6 | 0 | 8 | 8 | 4 | 8 | 2 | 1 | 2 |
| Netherlands | 5 | 2 | 2 | 6 | 2 | 2 | 7 | 7 | 9 |
| New Zealand | 4 | 2 | 5 | 5 | 2 | 2 | 9 | 7 | 9 |
| Nicaragua | 8 | 2 | 5 | 5 | 7 | 7 | 7 | 4 | 9 |
| Niger | 5 | 1 | 8 | 4 | 8 | 7 | 2 | 1 | 5 |
| Nigeria | 7 | 1 | 6 | 4 | 7 | 6 | 4 | 2 | 4 |
| Norway | 6 | 0 | 4 | 5 | 2 | 4 | 8 | 7 | 9 |
| Pakistan | 8 | 0 | 8 | 8 | 7 | 7 | 4 | 2 | 3 |
| Panama | 7 | 0 | 6 | 8 | 8 | 6 | 8 | 5 | 9 |
| Paraguay | 9 | 2 | 7 | 7 | 4 | 7 | 5 | 2 | 9 |
| Peru | 7 | 6 | 5 | 7 | 5 | 6 | 6 | 4 | 9 |
| Philippines | 6 | 2 | 8 | 6 | 9 | 8 | 6 | 3 | 9 |
| Poland | 3 | 2 | 8 | 3 | 1 | 0 | 5 | 5 | 0 |
| Portugal | 5 | 0 | 6 | 1 | 5 | 4 | 4 | 5 | 8 |
| Rumania | 2 | 4 | 8 | 6 | 2 | 0 | 5 | 5 | 0 |
| Rwanda | 9 | 9 | 7 | 8 | 4 | 7 | 2 | 1 | 4 |
| Saudi Arabia | 5 | 9 | 0 | 4 | 8 | 0 | 2 | 2 | 3 |
| Senegal | 3 | 2 | 4 | 6 | 6 | 7 | 2 | 2 | 5 |
| Sierre Leone | 7 | 1 | 3 | 4 | 9 | 5 | 1 | 2 | 3 |
| Somalia | 9 | 0 | 4 | 5 | 8 | 5 | 2 | 1 | 5 |

| Variable | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Card 1 Row | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| South Africa | 0 | 9 | 2 | | 6 | 2 | 5 | 8 | 4 | 4 | 6 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 6 |
| Spain | 0 | 9 | 3 | | 3 | 4 | 3 | 5 | 7 | 3 | 4 | 4 | 5 | 5 | 7 | 1 | 7 | 5 | 1 | 1 |
| Sudan | 0 | 9 | 4 | | 6 | 2 | 5 | 9 | 4 | 8 | 1 | 7 | 7 | 7 | 9 | 9 | 7 | 8 | 8 | 4 |
| Sweden | 0 | 9 | 5 | | 3 | 4 | 6 | 7 | 8 | 3 | 8 | 3 | 1 | 5 | 2 | 0 | 1 | 0 | 0 | 1 |
| Switzerland | 0 | 9 | 6 | | 3 | 9 | 7 | 3 | 6 | 5 | 8 | 4 | 1 | 5 | 2 | 0 | 1 | 1 | 1 | 7 |
| Syria | 0 | 9 | 7 | | 5 | 6 | 7 | 7 | 1 | 3 | 2 | 7 | 6 | 7 | 9 | 7 | 4 | 7 | 7 | 4 |
| Tanganyika | 0 | 9 | 8 | | 6 | 3 | 6 | 8 | 6 | 9 | 1 | 7 | 8 | 9 | 9 | 9 | 1 | 8 | 6 | 7 |
| Thailand | 0 | 9 | 9 | | 9 | 4 | 4 | 5 | 3 | 8 | 1 | 6 | 7 | 7 | 9 | 3 | 7 | 7 | 9 | 3 |
| Togo | 1 | 0 | 0 | | 6 | 9 | 9 | 7 | 5 | 9 | 1 | 9 | 8 | 9 | 9 | 9 | 6 | 8 | 7 | 7 |
| Trinidad | 1 | 0 | 1 | | 1 | 9 | 9 | 2 | 4 | 0 | 7 | 8 | 3 | 8 | 7 | 2 | 1 | 4 | 3 | 7 |
| Tunisia | 1 | 0 | 2 | | 5 | 7 | 7 | 6 | 6 | 6 | 3 | 7 | 6 | 7 | 9 | 8 | 7 | 7 | 8 | 2 |
| Turkey | 1 | 0 | 3 | | 5 | 3 | 4 | 6 | 4 | 6 | 2 | 4 | 5 | 5 | 7 | 6 | 4 | 6 | 8 | 2 |
| Uganda | 1 | 0 | 4 | | 6 | 6 | 6 | 7 | 4 | 9 | 1 | 8 | 8 | 9 | 9 | 7 | 1 | 8 | 5 | 8 |
| USSR | 1 | 0 | 5 | | 4 | 0 | 2 | 8 | 6 | 3 | 5 | 1 | 2 | 1 | 2 | 0 | 7 | 3 | 5 | 6 |
| UAR | 1 | 0 | 6 | | 5 | 3 | 4 | 7 | 3 | 5 | 3 | 5 | 6 | 5 | 9 | 8 | 9 | 7 | 8 | 3 |
| UK | 1 | 0 | 7 | | 3 | 6 | 3 | 2 | 8 | 1 | 9 | 1 | 1 | 3 | 2 | 0 | 1 | 0 | 1 | 5 |
| US | 1 | 0 | 8 | | 0 | 1 | 2 | 7 | 6 | 2 | 8 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 4 | 9 |
| Upper Volta | 1 | 0 | 9 | | 6 | 5 | 7 | 7 | 3 | 9 | 1 | 8 | 8 | 9 | 9 | 8 | 5 | 9 | 8 | 7 |
| Uruguay | 1 | 1 | 0 | | 2 | 6 | 8 | 8 | 7 | 2 | 6 | 6 | 3 | 7 | 5 | 1 | 1 | 2 | 2 | 4 |
| Venezuela | 1 | 1 | 1 | | 2 | 3 | 6 | 9 | 3 | 2 | 5 | 5 | 2 | 5 | 4 | 4 | 7 | 4 | 1 | 3 |
| Vietnam, N | 1 | 1 | 2 | | 9 | 7 | 5 | 3 | 5 | 5 | 3 | 7 | 8 | 7 | 9 | 8 | 9 | 6 | 8 | 5 |
| Vietnam Rep | 1 | 1 | 3 | | 9 | 6 | 5 | 4 | 2 | 5 | 1 | 7 | 7 | 7 | 9 | 8 | 7 | 6 | 8 | 5 |
| Yemen | 1 | 1 | 4 | | 5 | 6 | 7 | 7 | 7 | 9 | 1 | 9 | 8 | 9 | 9 | 9 | 6 | 8 | 9 | 1 |
| Yugoslavia | 1 | 1 | 5 | | 4 | 5 | 5 | 4 | 7 | 6 | 3 | 5 | 5 | 5 | 5 | 2 | 7 | 5 | 3 | 7 |
| China (Taiwan) | 1 | 1 | 6 | | 9 | 9 | 5 | 1 | 2 | 6 | 4 | 6 | 6 | 7 | 7 | 4 | 4 | 5 | 8 | 4 |

| Variable | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| South Africa | 8 | 7 | 3 | 5 | 4 | 1 | 3 | 7 | 9 | 3 | 1 | 3 | 4 | 7 | 9 |
| Spain | 3 | 3 | 1 | 1 | 9 | 3 | 1 | 6 | 4 | 9 | 1 | 7 | 9 | 6 | 9 |
| Sudan | 8 | 6 | 9 | 7 | 4 | 7 | 1 | 3 | 3 | 7 | 9 | 9 | 5 | 6 | 5 |
| Sweden | 3 | 2 | 1 | 1 | 9 | 3 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| Switzerland | 3 | 4 | 1 | 1 | 9 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 5 |
| Syria | 3 | 2 | 7 | 7 | 3 | 7 | 1 | 5 | 9 | 5 | 9 | 6 | 5 | 5 | 9 |
| Tanganyika | 3 | 6 | 9 | 7 | 4 | 9 | 7 | 3 | 3 | 5 | 6 | 3 | 6 | 4 | 5 |
| Thailand | 3 | 3 | 1 | 6 | 9 | 4 | 3 | 9 | 9 | 7 | 6 | 9 | 5 | 6 | 1 |
| Togo | 3 | 8 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 6 | 7 | 6 | 5 | 5 | 5 |
| Trinidad | 8 | 3 | 9 | 4 | 4 | 7 | 7 | 4 | 9 | 1 | 6 | 1 | 1 | 1 | 5 |
| Tunisia | 3 | 2 | 9 | 7 | 3 | 7 | 1 | 3 | 3 | 1 | 3 | 1 | 9 | 4 | 5 |
| Turkey | 3 | 3 | 1 | 3 | 9 | 4 | 1 | 7 | 9 | 1 | 5 | 1 | 1 | 1 | 1 |
| Uganda | 3 | 9 | 9 | 7 | 4 | 9 | 7 | 6 | 9 | 1 | 7 | 4 | 1 | 1 | 9 |
| USSR | 3 | 6 | 1 | 3 | 9 | 4 | 1 | 1 | 1 | 9 | 1 | 7 | 9 | 9 | 3 |
| UAR | 3 | 2 | 9 | 4 | 4 | 7 | 1 | 3 | 1 | 7 | 3 | 7 | 5 | 6 | 6 |
| UK | 3 | 2 | 1 | 1 | 9 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 1 |
| US | 8 | 2 | 1 | 1 | 4 | 1 | 1 | 7 | 9 | 1 | 1 | 1 | 1 | 1 | 5 |
| Upper Volta | 3 | 6 | 9 | 7 | 3 | 9 | 7 | 3 | 9 | 5 | 6 | 7 | 6 | 6 | 9 |
| Uruguay | 3 | 2 | 3 | 4 | 2 | 3 | 1 | 7 | 9 | 1 | 3 | 1 | 1 | 1 | 5 |
| Venezuela | 8 | 2 | 3 | 4 | 2 | 3 | 1 | 3 | 3 | 1 | 9 | 1 | 1 | 1 | 5 |
| Vietnam, N | 3 | 3 | 9 | 7 | 3 | 7 | 7 | 1 | 1 | 9 | 3 | 7 | 9 | 9 | 6 |
| Vietnam Rep | 3 | 3 | 9 | 7 | 3 | 7 | 7 | 6 | 1 | 8 | 6 | 7 | 9 | 6 | 9 |
| Yemen | 5 | 2 | 7 | 8 | 9 | 7 | 7 | 6 | 6 | 6 | 4 | 6 | 5 | 5 | 9 |
| Yugoslavia | 3 | 4 | 7 | 3 | 9 | 3 | 1 | 1 | 1 | 9 | 3 | 3 | 9 | 4 | 1 |
| China (Taiwan) | 5 | 8 | 9 | 5 | 0 | 4 | 7 | 4 | 3 | 4 | 3 | 3 | 9 | 4 | 1 |

| Variable | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| South Africa | 4 | 5 | 3 | 2 | 1 | 5 | 4 | 8 | 6 | 4 | 3 | 1 | 9 | 1 | 9 |
| Spain | 4 | 3 | 1 | 5 | 3 | 8 | 5 | 7 | 6 | 2 | 4 | 1 | 9 | 1 | 9 |
| Sudan | 1 | 9 | 1 | 2 | 1 | 6 | 6 | 5 | 6 | 5 | 8 | 5 | 5 | 6 | 9 |
| Sweden | 9 | 2 | 7 | 9 | 9 | 1 | 7 | 3 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Switzerland | 1 | 2 | 5 | 5 | 9 | 1 | 7 | 7 | 1 | 9 | 6 | 1 | 9 | 9 | 9 |
| Syria | 4 | 7 | 1 | 2 | 1 | 1 | 6 | 5 | 6 | 5 | 8 | 9 | 1 | 6 | 6 |
| Tanganyika | 9 | 9 | 3 | 2 | 7 | 8 | 9 | 1 | 7 | 2 | 1 | 1 | 9 | 9 | 1 |
| Thailand | 4 | 9 | 1 | 2 | 3 | 6 | 6 | 9 | 7 | 5 | 8 | 9 | 1 | 1 | 9 |
| Togo | 4 | 9 | 6 | 2 | 3 | 7 | 6 | 5 | 7 | 5 | 2 | 5 | 5 | 9 | 6 |
| Trinidad | 9 | 7 | 5 | 5 | 7 | 4 | 3 | 3 | 3 | 6 | 2 | 5 | 5 | 9 | 9 |
| Tunisia | 9 | 7 | 3 | 5 | 7 | 8 | 1 | 1 | 7 | 2 | 0 | 1 | 1 | 9 | 3 |
| Turkey | 9 | 5 | 3 | 5 | 3 | 7 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 9 | 4 |
| Uganda | 1 | 9 | 3 | 2 | 3 | 1 | 3 | 7 | 5 | 9 | 4 | 5 | 5 | 5 | 4 |
| USSR | 1 | 7 | 1 | 5 | 3 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 1 | 1 | 1 |
| UAR | 9 | 7 | 1 | 5 | 7 | 8 | 5 | 1 | 6 | 2 | 0 | 5 | 5 | 5 | 9 |
| UK | 1 | 2 | 7 | 7 | 9 | 4 | 1 | 3 | 3 | 7 | 3 | 1 | 1 | 4 | 9 |
| US | 4 | 2 | 7 | 7 | 2 | 8 | 1 | 1 | 1 | 7 | 3 | 1 | 1 | 4 | 3 |
| Upper Volta | 9 | 9 | 6 | 2 | 3 | 8 | 5 | 1 | 7 | 2 | 0 | 5 | 5 | 9 | 3 |
| Uruguay | 3 | 5 | 5 | 7 | 7 | 5 | 1 | 8 | 3 | 4 | 3 | 3 | 4 | 9 | 9 |
| Venezuela | 9 | 5 | 3 | 7 | 2 | 1 | 3 | 1 | 5 | 9 | 4 | 9 | 9 | 9 | 9 |
| Vietnam, N | 9 | 9 | 1 | 2 | 8 | 8 | 5 | 6 | 7 | 2 | 0 | 1 | 1 | 1 | 1 |
| Vietnam Rep | 9 | 9 | 1 | 2 | 1 | 8 | 8 | 9 | 7 | 3 | 1 | 4 | 4 | 4 | 9 |
| Yemen | 1 | 6 | 6 | 2 | 5 | 6 | 6 | 5 | 6 | 5 | 8 | 5 | 5 | 6 | 6 |
| Yugoslavia | 1 | 3 | 1 | 5 | 3 | 8 | 5 | 7 | 7 | 2 | 0 | 1 | 1 | 1 | 3 |
| China (Taiwan) | 6 | 5 | 3 | 7 | 9 | 4 | 3 | 7 | 3 | 3 | 4 | 1 | 3 | 4 | 1 |

| | | | | | Variable | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
| | | | | | Row | | | | | | | | | | |
| | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| South Africa | 9 | 1 | 1 | 1 | 9 | 1 | 1 | 5 | 1 | 3 | 9 | 9 | 2 | 3 | 3 |
| Spain | 9 | 9 | 9 | 9 | 1 | 1 | 3 | 5 | 1 | 0 | 9 | 5 | 2 | 2 | 3 |
| Sudan | 9 | 9 | 6 | 5 | 1 | 3 | 6 | 1 | 1 | 8 | 9 | 8 | 8 | 4 | 5 |
| Sweden | 9 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 1 | 8 | 5 | 1 | 2 | 2 |
| Switzerland | 1 | 1 | 0 | 1 | 9 | 9 | 1 | 9 | 9 | 0 | 9 | 8 | 0 | 2 | 2 |
| Syria | 9 | 7 | 6 | 5 | 5 | 3 | 3 | 1 | 1 | 7 | 9 | 5 | 7 | 4 | 5 |
| Tanganyika | 9 | 9 | 0 | 7 | 1 | 1 | 6 | 9 | 9 | 8 | 9 | 9 | 7 | 3 | 6 |
| Thailand | 9 | 9 | 6 | 9 | 9 | 3 | 9 | 1 | 1 | 0 | 9 | 6 | 8 | 4 | 5 |
| Togo | 9 | 9 | 6 | 5 | 1 | 3 | 3 | 1 | 1 | 2 | 9 | 8 | 9 | 3 | 3 |
| Trinidad | 9 | 1 | 3 | 1 | 9 | 4 | 3 | 9 | 9 | 4 | 9 | 9 | 3 | 4 | 5 |
| Tunisia | 9 | 9 | 8 | 7 | 1 | 1 | 3 | 9 | 1 | 7 | 9 | 7 | 6 | 4 | 5 |
| Turkey | 9 | 1 | 1 | 4 | 9 | 4 | 3 | 1 | 1 | 0 | 9 | 5 | 4 | 3 | 3 |
| Uganda | 1 | 6 | 3 | 4 | 1 | 5 | 6 | 9 | 9 | 8 | 9 | 8 | 7 | 3 | 4 |
| USSR | 5 | 9 | 2 | 9 | 9 | 1 | 3 | 5 | 1 | 5 | 1 | 1 | 2 | 3 | 2 |
| UAR | 9 | 9 | 6 | 9 | 5 | 1 | 3 | 1 | 1 | 7 | 9 | 5 | 4 | 3 | 4 |
| UK | 9 | 1 | 3 | 1 | 9 | 4 | 1 | 9 | 9 | 4 | 9 | 4 | 0 | 2 | 1 |
| US | 1 | 1 | 8 | 1 | 9 | 4 | 1 | 9 | 9 | 4 | 9 | 3 | 0 | 2 | 2 |
| Upper Volta | 9 | 9 | 8 | 7 | 1 | 1 | 6 | 9 | 5 | 6 | 9 | 8 | 9 | 4 | 5 |
| Uruguay | 9 | 1 | 0 | 1 | 9 | 9 | 3 | 9 | 9 | 0 | 8 | 8 | 3 | 3 | 2 |
| Venezuela | 3 | 6 | 8 | 4 | 9 | 4 | 3 | 4 | 1 | 0 | 7 | 8 | 3 | 4 | 5 |
| Vietnam, N | 9 | 9 | 7 | 9 | 1 | 1 | 3 | 5 | 1 | 5 | 1 | 3 | 9 | 4 | 6 |
| Vietnam Rep | 9 | 9 | 8 | 9 | 1 | 1 | 5 | 5 | 1 | 2 | 9 | 3 | 9 | 4 | 6 |
| Yemen | 9 | 7 | 6 | 5 | 5 | 3 | 7 | 1 | 1 | 8 | 9 | 8 | 8 | 3 | 6 |
| Yugoslavia | 5 | 9 | 7 | 9 | 9 | 1 | 3 | 5 | 1 | 5 | 1 | 2 | 3 | 2 | 3 |
| China (Taiwan) | 3 | 6 | 4 | 5 | 9 | 1 | 3 | 4 | 9 | 3 | 9 | 0 | 4 | 3 | 4 |

| | | | | | Variable | | | | | | | | Variable | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 |
| | | | | | Row | | | | | | | Card 2 | | Row | |
| | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 5 | 6 | 7 | 8 |
| South Africa | 2 | 1 | 3 | 3 | 6 | 5 | 4 | 5 | 9 | 7 | 4 | 8 | 5 | 8 | 8 |
| Spain | 2 | 5 | 6 | 4 | 8 | 4 | 3 | 2 | 9 | 1 | 8 | 4 | 5 | 0 | 8 |
| Sudan | 4 | 9 | 6 | 9 | 8 | 1 | 5 | 8 | 9 | 8 | 5 | 9 | 8 | 9 | 2 |
| Sweden | 3 | 5 | 5 | 2 | 3 | 7 | 3 | 1 | 2 | 0 | 9 | 4 | 4 | 9 | 9 |
| Switzerland | 2 | 6 | 5 | 3 | 3 | 9 | 4 | 1 | 8 | 0 | 9 | 3 | 4 | 6 | 9 |
| Syria | 1 | 9 | 7 | 7 | 7 | 3 | 6 | 5 | 8 | 9 | 4 | 7 | 5 | 9 | 2 |
| Tanganyika | 4 | 6 | 5 | 9 | 8 | 2 | 3 | 6 | 7 | 4 | 7 | 8 | 9 | 7 | 5 |
| Thailand | 6 | 8 | 7 | 9 | 8 | 1 | 7 | 6 | 6 | 0 | 8 | 4 | 5 | 9 | 9 |
| Togo | 5 | 6 | 8 | 9 | 8 | 1 | 2 | 6 | 5 | 0 | 5 | 6 | 9 | 7 | 8 |
| Trinidad | 4 | 8 | 8 | 3 | 3 | 6 | 4 | 7 | 2 | 6 | 6 | 3 | 7 | 6 | 7 |
| Tunisia | 5 | 9 | 6 | 8 | 7 | 3 | 2 | 7 | 6 | 5 | 4 | 5 | 7 | 9 | 1 |
| Turkey | 3 | 6 | 5 | 7 | 8 | 2 | 3 | 5 | 3 | 3 | 7 | 7 | 5 | 9 | 1 |
| Uganda | 4 | 4 | 5 | 9 | 8 | 0 | 4 | 6 | 7 | 8 | 4 | 4 | 9 | 6 | 6 |
| USSR | 3 | 1 | 0 | 2 | 8 | 6 | 8 | 5 | 0 | 5 | 7 | 7 | 3 | 8 | 5 |
| UAR | 4 | 9 | 6 | 7 | 8 | 3 | 7 | 5 | 9 | 2 | 6 | 1 | 4 | 9 | 1 |
| UK | 4 | 2 | 3 | 2 | 4 | 8 | 6 | 1 | 3 | 6 | 9 | 3 | 4 | 8 | 9 |
| US | 2 | 0 | 1 | 0 | 6 | 7 | 6 | 4 | 4 | 7 | 8 | 7 | 0 | 6 | 9 |
| Upper Volta | 3 | 8 | 8 | 9 | 8 | 1 | 3 | 6 | 6 | 4 | 7 | 7 | 9 | 9 | 6 |
| Uruguay | 6 | 7 | 7 | 4 | 6 | 1 | 3 | 0 | 5 | 9 | 8 | 8 | 3 | 3 | 9 |
| Venezuela | 4 | 5 | 8 | 2 | 3 | 0 | 5 | 6 | 2 | 3 | 2 | 7 | 4 | 2 | 9 |
| Vietnam, N | 2 | 9 | 3 | 7 | 8 | 2 | 8 | 8 | 3 | 0 | 2 | 3 | 6 | 9 | 8 |
| Vietnam Rep | 6 | 9 | 8 | 9 | 9 | 3 | 8 | 8 | 2 | 7 | 1 | 3 | 6 | 8 | 8 |
| Yemen | 1 | 9 | 9 | 9 | 5 | 0 | 3 | 6 | 9 | 3 | 5 | 8 | 7 | 9 | 0 |
| Yugoslavia | 2 | 5 | 4 | 4 | 8 | 6 | 4 | 3 | 1 | 3 | 9 | 4 | 3 | 6 | 6 |
| China (Taiwan) | 2 | 8 | 6 | 5 | 8 | 1 | 9 | 8 | 5 | 3 | 9 | 1 | 4 | 9 | 9 |

|  | Variable |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
|  | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 |
|  | Row |  |  |  |  |  |  |  |  |
|  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| South Africa | 2 | 3 | 6 | 5 | 4 | 3 | 9 | 5 | 8 |
| Spain | 4 | 0 | 8 | 1 | 4 | 6 | 4 | 5 | 9 |
| Sudan | 3 | 1 | 6 | 6 | 7 | 4 | 4 | 2 | 3 |
| Sweden | 5 | 3 | 5 | 3 | 1 | 2 | 9 | 8 | 9 |
| Switzerland | 5 | 1 | 5 | 3 | 2 | 6 | 9 | 8 | 7 |
| Syria | 9 | 0 | 5 | 9 | 7 | 5 | 4 | 3 | 2 |
| Tanganyika | 6 | 8 | 5 | 4 | 7 | 6 | 2 | 1 | 5 |
| Thailand | 7 | 4 | 6 | 8 | 8 | 6 | 3 | 2 | 9 |
| Togo | 3 | 1 | 1 | 8 | 7 | 6 | 2 | 2 | 5 |
| Trinidad | 2 | 5 | 0 | 5 | 9 | 3 | 1 | 4 | 7 |
| Tunisia | 6 | 0 | 5 | 4 | 7 | 4 | 4 | 2 | 2 |
| Turkey | 7 | 0 | 8 | 7 | 6 | 4 | 5 | 3 | 9 |
| Uganda | 7 | 9 | 5 | 7 | 6 | 5 | 2 | 2 | 4 |
| USSR | 3 | 5 | 9 | 5 | 3 | 0 | 5 | 5 | 0 |
| UAR | 4 | 1 | 6 | 8 | 8 | 2 | 3 | 3 | 2 |
| UK | 6 | 2 | 6 | 6 | 2 | 2 | 9 | 7 | 9 |
| US | 7 | 9 | 9 | 5 | 3 | 5 | 9 | 8 | 9 |
| Upper Volta | 5 | 0 | 8 | 6 | 6 | 6 | 2 | 1 | 5 |
| Uruguay | 9 | 2 | 7 | 7 | 4 | 6 | 8 | 5 | 9 |
| Venezuela | 4 | 9 | 4 | 7 | 6 | 4 | 6 | 4 | 9 |
| Vietnam, N | 3 | 2 | 5 | 4 | 6 | 2 | 4 | 2 | 1 |
| Vietnam Rep | 6 | 0 | 8 | 4 | 8 | 6 | 4 | 2 | 7 |
| Yemen | 7 | 9 | 5 | 3 | 6 | 7 | 1 | 2 | 2 |
| Yugoslavia | 1 | 0 | 8 | 1 | 4 | 2 | 5 | 4 | 2 |
| China (Taiwan) | 5 | 0 | 7 | 1 | 5 | 4 | 5 | 4 | 9 |

# Appendix B*

Excerpts from William Flanigan and Edwin Fogelman, "Patterns of Political Development and Democratization: A Quantitative Analysis."

In this paper we propose to examine through the use of varied quantitative measures a central problem in political analysis: the relationships through time between socio-economic variables on one hand and two basic political variables--political development and democratization. Interest in such relationships is hardly novel. In this paper, however, we introduce measures and indices based on quantitative data which have not previously been used and which permit forms of analysis that could not otherwise be applied. The studies of Deutsch, Russet, Lipset, Banks and Textor, and others have made plain the possibilities of comparative quantitative analyses. Almost without exception, however, these studies are cross-sectional in focus rather than historical or longitudinal; that is, they employ data from the contemporary period to make comparisons among units at a particular point-in-time. But although many interesting problems can be investigated through cross-sectional analysis there are other significant problems that can only be studied through longitudinal or time-series analysis. It is this neglected area of longitudinal quantitative analysis that we shall explore in the present study.

The dearth of quantitative longitudinal studies dealing with such obviously dynamic problems as the patterns of political development and democratization has undoubtedly been due less to any question about the possible interest of such studies than to the absence of useable relevant data. The data we shall use have all been collected by the Minnesota Political Data Archive.

Our main purpose is to examine relationships through time between three socio-economic variables--urbanization, education, and economic development--and two basic political variables--political development and democratization. The first problem is to find appropriate measures for each of the political variables.

## Political Development: An Index of Governmental Publications

Although the concept of political development is commonplace among students of comparative politics, there is notable disagreement concerning both the meaning of the concept and the indices that are appropriate for measuring levels of development. It seems, however, that one important aspect of political development is the extent to which a government is able to adopt the varied and complex policies that are demanded in every modern community. This ability to adopt complex policies we may term "administrative capacity." A basic premise in the analysis of political development is that not all political systems are equal in administrative capacity; not all governments are equally able to adopt the complex policies that are demanded by influential participants. The administrative capacity of a political system depends on a number of conditions, including the introduction of appropriate institutional structures, the presence of trained and motivated personnel, and the availability of relevant information on which policy-decisions can be based. The first two of these conditions have been discussed often by students of political development. A number of typologies have been constructed based on the institutional characteristics of political systems at different levels of development. Although the institutional characteristics that are usually stressed in such typologies do not refer merely to the administrative capacity of a system, some of these characteristics have a direct connection with the relative ability of different systems to adopt complex policies. However, from the standpoint of quantitative analysis a fundamental difficulty with such typologies is that the institutional characteristics they emphasize are never measured quantitatively. It would be unwarranted to say that institutional characteristics cannot be measured quantitatively; but the fact remains that leading typologists show little inclination toward quantitative measurement.

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*Appendices B and C are adapted from material developed by William Flanigan and Edwin Fogelman, Department of Political Science, University of Minnesota.

The most widely-used quantitative measures that bear on the administrative capacity of different political systems concern government employment and government revenues and expenditures. Compilations of political data regularly include figures on the number of government employees as a percentage of population or as a percentage of work force, as well as figures on government revenues and expenditures as a percentage of GNP, or on the ratio of different types of government expenditures. We ourselves have collected considerable data of this kind in historical depth. The difficulty here, however, aside from very serious problems in finding such data over long periods of time, is that the suitability of these measures as indications of administrative capacity is somewhat doubtful. Perhaps more elaborate measures of patterns of government employment and expenditures would yield more satisfactory results. But more elaborate measures are not yet available, and our own attempts to find the data for such measures have not been encouraging.

In place of the familiar measures of government employment, revenue, and expenditures we suggest an alternative indicator of administrative capacity related to the availability within a political system of certain types of information. Specifically, we propose an Index of Governmental Publications based on the volume and kinds of policy-relevant information that is published by the agencies of government. The underlying assumption is that the ability of a government to adopt complex policies is indicated by the volume and kinds of information that the government collects and publishes. Three kinds of information were selected as a basis for constructing the Index: census information; reports on trade and commerce; and government statistics. The volume of these types of information that a government publishes through the years is taken as an indication of administrative capacity and a measure of political development.

In constructing the index we counted the number of serial census reports, trade and commercial reports, and statistical reports published by our 29 governments from 1800 to 1960; the number of such serial publications in every decade was totaled as a score for each country in each decade. There are, however, certain limitations to the data. In the first place, the sources for these data should be the government publications themselves. Scores for each country should be computed directly from the publications issued by governmental agencies. Unfortunately, our limited resources made this procedure impossible. Instead, for the period 1800-1920 we counted the volume of serial governmental publications held in all United States libraries as reported in List of Serial Publication of Foreign Governments and for the period 1920-1960 we counted the volume of serial governmental publications held in selected British libraries as reported in the London Bibliography of the Social Sciences. The use of these sources rather than the governmental publications themselves introduces certain biases into the data, although the extent of these biases is uncertain. Probably the publications of non-Western governments are underestimated, but more generally we cannot be sure that the volume of publications for any country is completely accurate. For this reason, the index presented here is less reliable than we would like. We emphasize, however, that the sources of data for a more reliable index are accessible. With more time and funds the relevant government publications can be examined directly, and a highly reliable index can certainly be constructed.[1]

In the second place, the fact that data for the index were obtained from two separate sources posed the problem of combining the data into a single measure despite discrepancies in the figures reported in the two sources. To solve this difficulty we obtained raw scores for two overlapping decades (1910-1929) and on the basis of this overlap we fitted the more recent data from the London Bibliography to the trend established from our main source, Serial Publications. A conversion ratio for each country was obtained by comparing the two scores for the overlapping decades, and this ratio was used to extrapolate scores from 1930 to 1950.

In the third place, we limited ourselves only to serial governmental publications rather than total governmental publications, and we allowed a maximum score of 10 for each serial publication in each decade even when the number of publications in the series was higher. Moreover, we took no account of differences in the size of publications in particular series; a series of pamphlets was counted equally with a series of voluminous tomes. One result of these decisions is to depress the score for the more developed countries. Again, direct perusal of the relevant publications would enable us to construct a more sensitive and reliable index than has in fact been possible.

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[1] Scores for the United States were obtained by going directly to the Department of Commerce Index of Publications and counting exhaustively the number of relevant publications. None of our sources contained enough listings for Lebanon to compute an index. From 1900-1929 the Philippines was scored from the Catalogue of the Library of Congress, since publications for the Philippines were not listed in Serial Publications.

No extensive validation of this index was undertaken, but we do have governmental non-military employment data for the United Kingdom and the United States over most of the one hundred and sixty years. To the same degree the proportion of the population in civilian government employment indicates the extent of development, and we would expect a high correlation with the Index of Governmental Publications as another indicator of political development. In this instance we find a simple correlation coefficient of .95 in each country, which gives as much support for the index as we could hope for at the present time. Adequate validation depends on better independent indicators than government employment--indicators we lack at this time.

For present purposes all our countries have been grouped into four categories on the basis of their scores on the Index of Governmental Publications. Summary scores from 0 to 3 were assigned on the following basis:

| Score | Range on the Index of Governmental Publications |
|---|---|
| 3 | 1-50 |
| 2 | 51-150 |
| 1 | 151-250 |
| 0 | 251 and over |

Changes in political development based on these summary scores are presented in Table 1. (All Tables are included at the end of the paper.)

The distributions shown in Table 1 reveal four distinct patterns of change in political development.

Pattern A: One set of countries achieves an early high level of political development. These countries include Canada, UK, US, France, Italy, USSR, and Spain. All maintain the highest level of development for at least four decades. With two exceptions they show an early and gradual increase in political development. In the case of Italy the pattern of development is somewhat uneven; the pattern for the USSR is both more abrupt as well as obviously uneven in the decades of the revolutions and World War II.

Pattern B: A second set of countries attains a high level of development in the mid-20th century. These countries include India, Japan, and Switzerland. All have moderately high levels of development throughout the 20th century, but they reach the highest level only after World War II.

Pattern C: A third set of countries maintains a moderate level of development for a prolonged period, but they do not sustain the highest level of development. These countries include Argentina, Austria, Brazil, Chile, Colombia, Czechoslovakia, Egypt, Germany, Hungary, Indonesia, Mexico, Portugal and South Africa. With three exceptions, the trend of development is smooth. Austria, Germany, and Hungary reveal uneven fluctuations in development associated with major political disruptions.

Pattern D: A fourth set of countries remains at a low level of political development with at most moderate increase in the mid-20th century. These countries include Burma, Lebanon, Nigeria, Philippines, Thailand, and Turkey.

Although there are important problems in generalizing the Index of Governmental Publications as a measure of political development, the Index seems to us to have sufficient face validity to warrant its use in examining relationships between political development, democratization, and socio-economic variables.

## An Index of Democratization

Like political development, the concept of democratization has been defined in different ways by different scholars. But despite the variety of definitions students of democracy tend to emphasize four basic characteristics as distinctive features of democratic political systems. These distinguishing characteristics are electoral or parliamentary succession, political competition, popular electoral participation, and absence of suppression. If measures could be devised for each of these characteristics an Index of Democratization could be constructed based on combinations of the four basic measures. In this section we shall introduce such an index and apply it to our 29 countries.

## Democratic Succession

The practices through which political leaders succeed to the principal executive offices are a major aspect of every political system. To describe these practices, however, is not always easy, if only because there may be significant divergence between the formal practices and the actual practices of succession. In describing the processes of succession that are characteristic of democratic systems we found it useful to identify a number of different combinations of formal and actual practices of succession that can prevail in any political system. This variety of formal and actual practices can be described as follows:

| formal practices | actual practices |
|---|---|
| electoral or parliamentary: selection of chief executive official through a general election or through investiture by a legislature | electoral or parliamentary |
|  | managed electoral or parliamentary: manipulation of electoral or parliamentary procedures through varied types of pressure, bribery, etc. |
| parliamentary monarchy: selection through appointment by a monarch with legislative approval | parliamentary monarchy |
| institutional support: selection of the chief executive official by a specific group or organization, such as a party, military, or religious organization | institutional support: including, in addition to selection by a party, military, or religious organization, succession as a result of popular uprising and other forms of usurpation |
| monarchy: selection through inheritance | monarchy |
| colonial: selection by a colonial power | colonial |
| no formal practice established: interim period in which there has been as yet no formalization of the process of succession | foreign imposition |

On the basis of this general typology of practices of succession we constructed a summary measure for democratic succession to the chief executive offices in terms of the following code:

Index of Democratic Succession

0 democratic: formal succession through elections or parliamentary investiture and actual succession through elections or parliamentary investiture
1 semi-democratic: formal succession through elections or parliamentary investiture and actual succession through manipulation, institutional support, or other non-electoral practices
2 non-democratic: formal succession through non-electoral practices and actual succession through non-electoral practices

The use of this measure involves certain difficulties and has a number of implications in assessing a system as democratic. To begin with, identification of the chief executive official is itself sometimes a matter of judgment. When alternative choices were possible we selected the official or officials who seemed to us to occupy the most critical role in the making of policy. Secondly, decisions as to which practices are actually prevalent in a system can also be controversial. Especially in instances of institutional support or managed elections it is not always easy to identify the actual means of succession. Thirdly, the measure discriminates against systems that are formally democratic but in which actual succession occurs through controlled elections or manipulated parliamentary procedures. In this respect the measure is biased against democratic scores. Moreover, this bias is reinforced by our decision to count the worst score for the decade. In other words, our scoring reflects the failure of democratic succession in a country rather than the typical patterns of succession in that country.

Scores on democratic succession for the 29 countries are shown in Table 2. When a decade passes with no instance of succession, the practice of the previous decade is continued.

## Competition

The second measure comprised within our overall Index of Democratization is a measure of political competition. There are many different ways in which political competition can be defined, described, and measured, but in a broad comparative and historical perspective only some rather simple measures seem feasible--at least for the time being. Our measure of political competition is based on two characteristics of the system: the presence in the system of legal opposition parties, and the presence of opposition in a regular important elected legislature. Countries are scored in terms of the combination of these characteristics that are present in any decade, as follows:

Index of Political Competition

0. presence of legal opposition parties and opposition in a regular important elected legislature

1. presence of either legal opposition parties or opposition in a regular important elected legislature
2. presence of neither feature

Like the measure of democratic succession, the use of this measure of political competition has certain implications that should be noticed. In the first place, the presence of opposition parties is treated rather formally. A "party" is regarded as any group that identifies itself as such, and the presence of an opposition party is considered as a matter of legal status without regard to how effective the opposition party may be as a political organization. Secondly, identification of a regular important elected legislature involves some controversial matters of judgment. By "regular" we mean that the legislature has not been convened only for a single or limited number of sessions and that it has not been disrupted during the decade; by "important" we mean that the legislature either selects the chief executive or plays a major role in policy-making; by "elected" we mean that members of the legislature are selected by some broad electorate. The existence of these conditions is obviously in many cases a matter of judgment, especially in regard to whether or not a legislature should be regarded as "important". Thirdly, at least in part the measure of political competition was intended to discriminate between modern democratic and modern totalitarian systems, and it does serve this purpose well enough. However, it appears rather indiscriminate for developing systems in both the 19th and 20th centuries. The measure seems too generous in scoring systems which quite early in their development contain both forms of opposition--party opposition and legislative opposition. It appears that highly undeveloped traditional regimes and highly developed totalitarian regimes are most likely to suppress opposition; all other regimes are likely to permit at least token opposition.

Scores on political competition for the 29 countries are presented in Table 3.

## Popular Electoral Participation

A third characteristic of democratic systems is widespread popular participation in the electoral process. Actually, mass electoral participation is also characteristic of developed systems, as contrasted with democratic systems, so that in itself popular participation is no indicator of democracy. To construct an Index of Democratization a measure of electoral participation must be combined with the other measures we have been describing.

To measure electoral participation we have recorded the type of suffrage prevalent in each decade in national elections for the legislature or the presidency, whichever elections were most important in the selection of the chief executive official. These types of suffrage were scored as follows:

0. national elections with universal suffrage (including universal male suffrage as well as minor suffrage requirements such as residence)
1. national elections with moderate restrictions on suffrage
2. national elections with severe restrictions on suffrage
3. no elections

Obviously, the distinction between "moderate" and "severe" restrictions on suffrage is in part a matter of judgment. Moreover, the measure as a whole refers to the effects of formal suffrage requirements rather than actual electoral participation. No doubt there would have been advantages in using turnout as the indicator of electoral participation. But turnout data are extremely difficult to obtain for many countries. Some of the variation in scores for individual countries probably exaggerates fluctuation in actual participation, since the scores reflect an easing and tightening of suffrage requirements which may have had relatively slight impact on turnout in the short run.

Scores on popular participation for the 29 countries are presented in Table 4.

## Absence of Suppression

The fourth characteristic of democratic systems is the absence of suppression directed against individuals, groups, or organizations that participate in the political process. To indicate the extent of suppression in a system we have scored instances of suppressive acts in terms of both the degree of coercion and the selectivity of the acts. We assigned scores on the following basis:

### Index of Political Suppression

0. no significant political suppression (may include the outlawing of a minor extremist party or media censorship)
1. selective coercive suppression (including individual and group arrests or executions as well as coercive measures against parties or other organizations)
2. widespread electoral suppression (applied to widespread coercion practiced during an election period against opposition individuals, groups, and organizations)
3. general repression (including colonial regimes, generally autocratic regimes, and foreign occupation)
4. civil war conditions
5. severe suppression (applied to police-state and totalitarian regimes)

Since all regimes attempt to maintain order we have not considered governmental responses to riots or uprisings as instances of suppression; rather, we have tried to record more general suppressive practices. We have coded the most suppressive acts for each decade, so the measure is biased toward suppressive scores. Again, therefore, our measure reflects the failures of democratic systems rather than their typical patterns. Several types of suppression are omitted in our measure. We have not recorded acts of suppression by local governmental units when such acts were obviously distinct from the national unit; nor have we recorded acts of suppression carried out by non-governmental organizations, although suppressive acts of this kind could be extremely significant under certain circumstances.

Scores on political suppression for the 29 countries are presented in Table 5.

To construct a general Index of Democratization we combined the four measures of democratic succession, political competition, popular participation, and political suppression into a single comprehensive measure. Scores were assigned to each country for every decade in terms of the following eight-point rankings:

Index of Democratization

0. Succession = formal and actual succession through elections or parliamentary investiture
Competition = presence of legal opposition parties and opposition in a regular important elected legislature
Participation= national elections with universal suffrage
Suppression = no significant political suppression
1. Succession = formally electoral, parliamentary or parliamentary monarchy - actual succession managed or institutional support
Competition = Same as for "0"
Participation= Any national election
Suppression = no widespread electoral suppression or worse
2. Succession = Same as for "1"
Competition = Same as for "0"
Participation= Same as for "1"
Suppression = no general repression or worse
3. Succession = Same as for "1"
Competition = Opposition in regular elected legislature
Participation= Same as for "1"
Suppression = Same as for "2"
4. Succession = Same as for "1"
Competition = Opposition in any elected legislature
Participation= Same as for "1"
Suppression = Same as for "2"
5. Succession = Legitimate succession including colonial and monarchical
Competition = Opposition in any elected legislature or legal opposition party
Participation= Same as for "1"
Suppression = Same as for "2"
6. Succession = Same as for "1"
or
Participation= Same as for "1"
or
Competition = Same as for "5"
7. All other combinations

The combination of four measures--competition, participation, suppression, and democratic succession--yields the scores on democratization shown in Table 6.

Inspection of Table 6 reveals four patterns of democratization.

Pattern I: One set of countries remains consistently democratic virtually without interruption through the entire period. These countries are Canada, Switzerland, United Kingdom, and United States. The major departure from a consistently democratic pattern occurs in the United States during the decade of the Civil War. This results from the high suppression score for civil war conditions under our coding. The fact that only four countries are consistently democratic reflects the severity of our Index of Democratization. The requirements for political competition, including legal opposition parties and opposition in a regular important elected legislature are sufficiently demanding to exclude most countries even during otherwise democratic decades.

Pattern II: A second set of countries remains moderately democratic for a number of decades but never sustains a consistently democratic regime. These countries include Argentina, Chile, France, Germany, Hungary, and Italy. All reveal some unevenness in patterns of democratization. With the exception of Chile all have undergone one or more decades of highly undemocratic disruptions during their development.

Pattern III: A third set of countries is predominantly non-democratic but with some interludes of at least moderate democracy. These countries include Austria, Brazil, Colombia, Czechoslovakia, Mexico, Portugal, and Spain. Despite considerable variation in specific patterns of democratization among these countries, all revert to highly undemocratic regimes following their most democratic interludes.

Pattern IV: A fourth set of countries remains consistently undemocratic throughout the entire period. These countries are Burma, Egypt, India, Indonesia, Japan, Lebanon, Nigeria, Philippines, South Africa, Thailand, Turkey, and USSR. The major departure from the consistently undemocratic pattern occurs following World War II, when India, Japan, Lebanon, the Philippines, and Turkey achieve relatively democratic regimes. Within the generally undemocratic pattern three types of regimes can be distinguished: colonial regimes (Burma, Egypt, India, Indonesia, Lebanon, Nigeria, Philippines --for varying periods of time); traditional authoritarian regimes (Egypt, Japan, Lebanon, Thailand, Turkey, Russia, and South Africa--again for varying periods); and a modern totalitarian regime (USSR).

No doubt exception can be taken to the specific scores for democratization assigned to particular countries in various decades. In part such disagreements may reflect differences in judgment and interpretation. Beyond differences of judgment, however, our code does contain some implicit limitations. Scoring under the code ignores abortive attempts to establish democratic regimes (as in Russia in 1917 or during the European revolutions of 1848) as well as short-lived democratic regimes during a decade of severe suppression or undemocratic suppression (as in Japan in the 1920's). At the same time, other scores may exaggerate the extent of democratization through our effort to record periods of experience with some democratic institutions and practices under otherwise undemocratic conditions (as in Brazil and Mexico during the early decades). These implicit biases certainly affect our patterns of democratization to some degree, but whatever the effects may be the general acceptability of the findings depends at this stage on face validity.

## Social and Economic Variables

Since our main purpose is to examine relationships between political variables and socio-economic variables we must now describe briefly the social and economic measures we propose to use in the analysis: urbanization, education, and agricultural employment.

### Urbanization

The simplest of the three measures is urbanization, which is defined as the proportion of the population in cities over 100,000. Population estimates are generally available for all 29 countries throughout the entire period of our study. During earlier periods, when the accuracy of population estimates is most questionable, considerable variation in urbanization figures is quite tolerable, since the proportion of population in cities over 100,000 is so small that large changes in proportions would not influence the overall trend.

The selection of 100,000 as a basis for estimating the population in urban areas was arbitrary, dictated by the greater availability of worldwide data on cities over 100,000 in several almanacs and yearbooks. For most countries our data extend back in time to 1800 or to a point where the unit has no cities over 100,000. However, there are several characteristics of the measure that should be noted. In countries with a small population, the growth of any city over the 100,000 mark causes the measure to jump markedly—the trend appears more jagged than the actual overall growth of the urban areas warrants. In countries with large populations this is no problem. There is also a difficulty in establishing comparability among units because of uncertainty in some data as to whether population figures for cities include the entire urban area or merely the central city.

### Agricultural Employment

Agricultural employment is measured by the proportion of the labor force engaged in agriculture. Unfortunately, this measure appears to be subject to some error, particularly in the early periods. During preindustrial and precommercial periods estimates of the proportion of a country's labor force employed in various ways may be quite inaccurate. More accurate estimates generally are available only when industrialization is underway. Not only are estimates of the labor force in agriculture subject to error but estimates of the total labor force are also open to question. Moreover, the reported estimates are not always strictly comparable either within a country or between countries, since practices change in estimating the labor force, particularly with respect to including women, counting rural populations, or counting all males as opposed only to employed males. Nevertheless, this measure remains the best single indicator we have of economic development for all our units over the whole time period.

## Education

Our measure of education consists of the number of children in primary education as a proportion of total population. This rather curious way of measuring the level of education in a country is used because of its sensitivity during early periods of development. However, it is not as appropriate for more developed countries. In early periods the measure accurately reflects the low level of investment in education as well as the gradual increase in this investment. But later, as the age distribution of the population shifts, it also responds to the proportional decline of primary school students in the entire population.[2] The accuracy of estimates on primary education is probably fairly good once a government begins reporting such information. However, there are problems with comparability from one unit to the next, especially since nongovernmental schools may be included or excluded in various patterns.

## Political Development and Patterns of Democratization

Having introduced our principal measures and indices we can now consider some relationships between the political variables themselves and also between political variables on one hand and socio-economic variables on the other...

Figure 9 shows the average of each social and economic characteristic for all countries grouped according to pattern of democratization.

If we turn now to democratization we find that countries with different patterns of democratization over the last 160 years have quite distinct social and economic characteristics for the same period. As Figure 9 shows, consistently democratic countries have smaller proportions of their labor forces in agriculture, are more urbanized, and have higher proportions of the population in elementary schools. The consistently undemocratic countries show the opposite tendency, with high levels of employment in agriculture throughout, relatively little urbanization until quite recently, and low levels of education until the last two decades. On all three variables the moderately democratic patterns (Group II) fall clearly between the consistently democratic countries and the predominantly undemocratic.

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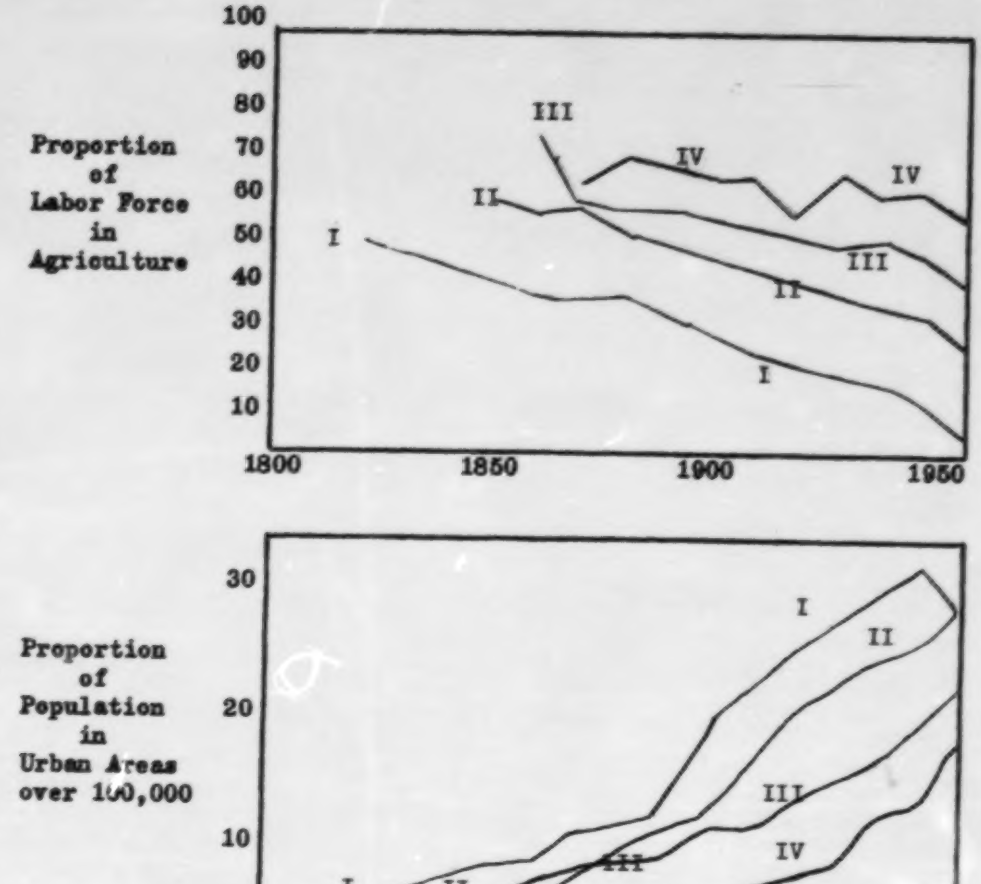
[2] We are working on the possibility of converting a country's score from the primary education index to an index incorporating higher education data as the country reaches an advanced stage of development.

Figure 9. Index of Democratization and Social and Economic Variables.



**Group I**

Canada
Switzerland
United Kingdom
United States

**Group II**

Argentina
Chile
France
Germany
Hungary
Italy

**Group III**

Austria
Brazil
Colombia
Czechoslovakia
Portugal
Mexico
Spain

**Group IV**

Burma
India
Indonesia
Japan
Lebanon
Nigeria
Philippines
South Africa
Thailand
Turkey
U.S.S.R.

# APPENDIX C*

## Tables of Coded Scores for Figures 1-8

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*Preparation of this manuscript was aided by the Curriculum Development Project on Laboratories in Political Science, University of Minnesota.

Figure 1. Index of Governmental Publications.

| | 1800 | | | | | | | | | | 1900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | | | | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 0 | 0 |
| Austria | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 0 | 2 | 2 | 2 | 2 | 1 |
| Brazil | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 1 | 0 | 0 |
| Burma | | | | | | | | | | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| Canada | | | | | | | 3 | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Chile | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 |
| Colombia | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 1 |
| Czechoslovakia | | | | | | | | | | | | | 2 | 2 | 1 | 1 |
| Egypt | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| France | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Germany | | | | | | | | 3 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | |
| Hungary | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 1 | 1 | 1 |
| India | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 |
| Indonesia | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 0 |
| Italy | | | | | | | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Japan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| Lebanon | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mexico | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |
| Nigeria | | | | | | | | | | | | 3 | 3 | 3 | 2 | 1 |
| Philippines | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| Portugal | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 |
| South Africa | | | | | | | | | | | | 2 | 2 | 2 | 1 | 1 |
| Spain | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switzerland | | | | | 3 | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 |
| Thailand | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| Turkey | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 |
| U.S.S.R. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| United Kingdom | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| United States | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |

Blank spaces indicate that the unit was not in existence or was otherwise inappropriate.

## Figure 2. Index of Democratic Succession.

|  | 1800 |  |  |  |  |  |  |  |  |  | 1900 |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | 2 |  |  | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| Austria | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 0 |
| Brazil | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |
| Burma |  |  |  |  |  |  |  |  | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Canada |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chile | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Colombia |  |  |  | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Czechoslovakia |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 2 | 2 |
| Egypt | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| France | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| Germany |  |  |  |  |  |  |  | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 2 |  |
| Hungary | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| India | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 |
| Indonesia | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Italy |  |  |  |  |  |  | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 |
| Japan | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 0 |
| Lebanon | 2 | 2 | 2 | 2 |  |  | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 |
| Mexico | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| Nigeria |  |  |  |  |  |  |  |  |  |  |  | 2 | 2 | 2 | 2 | 2 |
| Philippines | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 |
| Portugal | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| South Africa |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 |
| Spain | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Switzerland |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thailand | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Turkey | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 |
| U.S.S.R. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| United Kingdom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| United States | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Blank spaces indicate that the unit was not in existence or was otherwise inappropriate.

Figure 3. Index of Political Competition.

| | 1800 | | | | | | | | | | 1900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | 2 | | | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| Austria | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Brazil | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| Burma | | | | | | | | | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 |
| Canada | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chile | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Colombia | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Czechoslovakia | | | | | | | | | | | | | 0 | 0 | 2 | 2 |
| Egypt | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 2 |
| France | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Germany | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | |
| Hungary | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| India | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Indonesia | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Italy | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| Japan | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Lebanon | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 |
| Mexico | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nigeria | | | | | | | | | | | | 2 | 1 | 1 | 1 | 0 |
| Philippines | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 |
| Portugal | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| South Africa | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| Spain | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Switzerland | | | | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thailand | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Turkey | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 |
| U.S.S.R. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| United Kingdom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| United States | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Blank spaces indicate that the unit was not in existence or was otherwise inappropriate.

Figure 4. Index of Popular Electoral Participation.

| Country | 1800<br>00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 1900<br>90 | 00 | 10 | 20 | 30 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Argentina | 3 |  |  | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Austria | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brazil | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| Burma |  |  |  |  |  |  |  |  | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 0 |
| Canada |  |  |  |  |  |  | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chile | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Colombia |  |  |  | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Czechoslovakia |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 |
| Egypt | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| France | 3 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Germany |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |  |
| Hungary | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 |
| India | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 0 | 0 |
| Indonesia | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 |
| Italy |  |  |  |  |  |  | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Japan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| Lebanon | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Mexico | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| Nigeria |  |  |  |  |  |  |  |  |  |  |  | 3 | 3 | 3 | 3 | 0 |
| Philippines | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 0 |
| Portugal | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| South Africa |  |  |  |  |  |  |  |  |  |  |  | 2 | 2 | 2 | 2 | 2 |
| Spain | 3 | 0 | 3 | 2 | 2 | 2 | 0 | 2 | 3 | 0 | 0 | 0 | 3 | 0 | 3 | 3 |
| Switzerland |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thailand | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 |
| Turkey | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 |
| U.S.S.R. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 |
| United Kingdom | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| United States | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Blank spaces indicate that the unit was not in existence or was otherwise inappropriate.

Figure 5. Index of Political Suppression.

| | 1800 | | | | | | | | | | 1900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | 2 | | | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| Austria | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 5 | 5 | 0 |
| Brazil | 3 | 3 | 3 | 4 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | 1 | 5 | 5 | 0 |
| Burma | | | | | | | | | 3 | 3 | 3 | 3 | 3 | 1 | 5 | 0 |
| Canada | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chile | 3 | 4 | 2 | 2 | 2 | 4 | 1 | 0 | 2 | 4 | 0 | 0 | 2 | 1 | 1 | 0 |
| Colombia | | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 0 | 4 | 4 |
| Czechoslovakia | | | | | | | | | | | | | 1 | 0 | 5 | 5 |
| Egypt | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 5 |
| France | 3 | 3 | 3 | 3 | 4 | 3 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 3 | 0 |
| Germany | | | | | | | | 1 | 1 | 1 | 0 | 1 | 1 | 5 | 5 | |
| Hungary | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 0 | 0 | 1 | 0 | 5 | 1 | 1 | 5 | 5 |
| India | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 0 |
| Indonesia | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 1 |
| Italy | | | | | | | 4 | 2 | 2 | 2 | 1 | 1 | 5 | 5 | 5 | 0 |
| Japan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 3 | 3 | 5 | 1 |
| Lebanon | 5 | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 1 |
| Mexico | 3 | 4 | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 0 | 1 |
| Nigeria | | | | | | | | | | | | 3 | 3 | 3 | 3 | 1 |
| Philippines | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 1 |
| Portugal | 3 | 3 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 5 | 1 | 5 | 5 | 5 | 5 |
| South Africa | | | | | | | | | | | | 3 | 3 | 3 | 3 | 5 |
| Spain | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 1 | 1 | 1 | 1 | 2 | 5 | 5 | 5 |
| Switzerland | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Thailand | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 5 | 5 |
| Turkey | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 1 | 5 | 5 | 5 | 1 |
| U.S.S.R. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 |
| United Kingdom | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| United States | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Blank spaces indicate that the unit was not in existence or was otherwise inappropriate.

## Figure 6. Index of Democratization.

| | 1800 | | | | | | | | | | 1900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | 7 | | | 7 | 7 | 6 | 2 | 2 | 2 | 2 | 2 | 0 | 1 | 2 | 6 | 6 |
| Austria | 7 | 7 | 7 | 7 | 6 | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 0 | 6 | 6 | 0 |
| Brazil | 7 | 7 | 6 | 6 | 6 | 3 | 3 | 3 | 3 | 6 | 3 | 3 | 3 | 6 | 6 | 1 |
| Burma | | | | | | | | | 7 | 7 | 7 | 7 | 6 | 5 | 6 | 6 |
| Canada | | | | | | | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chile | 7 | 7 | 4 | 3 | 3 | 6 | 3 | 3 | 3 | 6 | 1 | 1 | 2 | 1 | 1 | 0 |
| Colombia | | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 2 | 2 | 0 | 6 | 6 |
| Czechoslovakia | | | | | | | | | | | | | 1 | 0 | 6 | 6 |
| Egypt | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 4 | 6 | 6 |
| France | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 0 | 1 | 1 | 1 | 0 | 1 | 6 | 7 |
| Germany | | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 7 | |
| Hungary | 6 | 7 | 6 | 6 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 6 | 1 | 1 | 6 | 6 |
| India | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 0 |
| Indonesia | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 |
| Italy | | | | | | | 6 | 2 | 2 | 2 | 1 | 1 | 6 | 6 | 6 | 0 |
| Japan | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 1 |
| Lebanon | 7 | 7 | 7 | 7 | | | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 5 | 1 |
| Mexico | 7 | 7 | 6 | 4 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 6 | 6 | 3 | 3 | 3 |
| Nigeria | | | | | | | | | | | | 7 | 6 | 6 | 6 | 5 |
| Philippines | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 1 |
| Portugal | 7 | 7 | 6 | 6 | 6 | 6 | 3 | 3 | 3 | 3 | 6 | 1 | 6 | 6 | 6 | 6 |
| South Africa | | | | | | | | | | | | 6 | 6 | 6 | 6 | 6 |
| Spain | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 1 | 1 | 1 | 6 | 6 | 7 | 7 |
| Switzerland | | | | | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Thailand | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 |
| Turkey | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 4 | 6 | 6 | 6 | 1 |
| U.S.S.R. | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 6 | 6 |
| United Kingdom | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| United States | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Blank spaces indicate that the unit was not in existence or was otherwise inappropriate.

Figure 7. Index of Agricultural Employment.

| | 1800 | | | | | | | | | | 1900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | | | | | | | | 67 | 63 | 59 | 53 | 45 | 38 | 32 | 26 | 25 |
| Austria | | | | | | | | 48 | 50 | 43 | 39 | 41 | 23 | 25 | | |
| Brazil | | | | | | | | | | | | | | | | |
| Burma | | | | | | | | | | | 67 | 71 | 69 | | 65 | 65 |
| Canada | | | | | | | | 50 | 51 | 48 | 43 | 37 | 35 | 31 | 28 | 21 |
| Chile | | | | | | | | | | | | | 37 | 35 | 36 | 31 |
| Colombia | | | | | | | | | | | | | | | | |
| Czechoslovakia | | | | | | | | | | | | | 40 | 39 | 40 | 38 |
| Egypt | | | | | | | | | | | | 71 | 65 | 67 | 71 | 64 |
| France | 75 | 70 | 66 | 63 | 62 | 62 | 54 | 50 | 48 | 45 | 44 | 42 | 41 | 37 | 34 | 30 |
| Germany | | | | | | | | | 42 | 38 | 35 | 33 | 31 | 30 | 27 | 23 |
| Hungary | | | | | | | | | 62 | 60 | 59 | 56 | 58 | 54 | 50 | 51 |
| India | | | | | | | | 65 | 60 | 61 | | 63 | 64 | 64 | | 72 |
| Indonesia | | | | | | | | | | | | | | | | |
| Italy | | | | | | | 62 | 62 | 57 | 58 | 59 | 55 | 56 | 51 | 47 | 42 |
| Japan | | | | | | | | | 82 | 76 | 70 | 63 | 55 | 50 | 45 | 46 |
| Lebanon | | | | | | | | | | | | | | | | |
| Mexico | | | | | | | | | | | 70 | 68 | 71 | 70 | 65 | 58 |
| Nigeria | | | | | | | | | | | | | | | | |
| Philippines | | | | | | | | | | | | | | | | |
| Portugal | | | | | | | | | | 65 | 62 | 58 | | 56 | 49 | 48 |
| South Africa | | | | | | | | | | | | | | | | |
| Spain | | | | | | | | | | 69 | 60 | 56 | 57 | 50 | 52 | 49 |
| Switzerland | | | | | | | | | | 38 | 31 | 27 | 26 | 21 | 21 | |
| Thailand | | | | | | | | | | | | | | | | |
| Turkey | | | | | | | | | | | | | | | | |
| U.S.S.R. | | | | | | | | | | | | 75 | | 80 | 56 | 43 |
| United Kingdom | | 35 | 33 | 28 | 22 | 22 | 19 | 15 | 13 | 10 | 9 | 9 | 8 | 6 | 6 | 5 |
| United States | | | 72 | 71 | 69 | 64 | 59 | 53 | 49 | 43 | 38 | 31 | 27 | 21 | 18 | 13 |

## Figure 8. Index of Urbanization.

| | 1800 | | | | | | | | | 1900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 00 | 10 | 20 | 30 | 40 | 50 |
| Argentina | | | | | | | | 10 | 14 | 16 | 20 | 23 | 25 | 28 | 32 | 38 |
| Austria | | | | | | | | | | | | | | | | |
| Brazil | | | | | | | | | | 6 | 10 | 9 | 9 | 10 | 11 | 13 |
| Burma | | | | | | | | | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 5 |
| Canada | | | | | | | 1 | 2 | 3 | 8 | 8 | 15 | 19 | 22 | 23 | 23 |
| Chile | | | | | | | 2 | 5 | 8 | 12 | 15 | 16 | 19 | 21 | 23 | 28 |
| Colombia | | | | | | | | | | 3 | 2 | 3 | 3 | 8 | 9 | 18 |
| Czechoslovakia | | | | | | | | | | | | | | | | |
| Egypt | | | | | | | | | 9 | 9 | 9 | 9 | 10 | 12 | 13 | 19 |
| France | 3 | 3 | 3 | 3 | 4 | 5 | 7 | 9 | 10 | 12 | 13 | 14 | 15 | 16 | 16 | 17 |
| Germany | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 6 | 8 | 12 | 16 | 21 | 26 | 29 | 30 | 27 |
| Hungary | | | | | | 2 | 2 | 2 | 3 | 3 | 5 | 6 | 14 | 18 | 19 | 21 |
| India | | | | | | | | | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 7 |
| Indonesia | | | | | | | | | | 1 | 1 | 1 | 1 | 3 | | 7 |
| Italy | 4 | 4 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 9 | 11 | 15 | 17 | 19 | 20 |
| Japan | | | | | | | | | | 6 | 9 | 11 | 12 | 18 | 29 | 26 |
| Lebanon | | | | | | | | | | | | | | | | |
| Mexico | | | | | | | | | | 3 | 3 | 5 | 7 | 8 | 10 | 24 |
| Nigeria | | | | | | | | | | | | | | | | |
| Philippines | | | | | | | | | | 2 | 3 | 3 | 3 | 3 | 6 | 9 |
| Portugal | | | | | | | | | | | | | | | | |
| South Africa | | | | | | | | | | | | | | | | |
| Spain | | | | | | | | | | 7 | 9 | 10 | 12 | 15 | 20 | 24 |
| Switzerland | | | | | | | | | | | 11 | 12 | 12 | 16 | 18 | 21 |
| Thailand | | | | | | | | | | | | | | | | |
| Turkey | | | | | | | | | | 7 | 8 | 8 | | 6 | 6 | 8 |
| U.S.S.R. | | | | | | | | | | 3 | 4 | 4 | | 8 | 15 | 19 |
| United Kingdom | 9 | 11 | 14 | 17 | 20 | 22 | 21 | 25 | 29 | 32 | 34 | 37 | 38 | 39 | 44 | 50 |
| United States | | 1 | 3 | 4 | 5 | 6 | 8 | 11 | 11 | 16 | 19 | 22 | 26 | 30 | 29 | 29 |